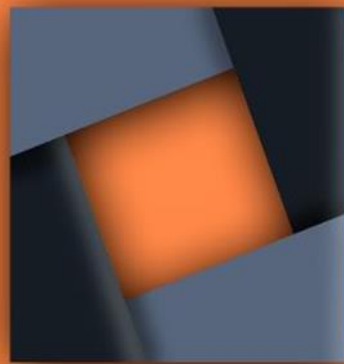


JOURNAL OF EDUCATION AND RECREATION PATTERNS

2757-9344



2023

**VOLUME 4
NUMBER 1**



Journal of Education and
Recreation Patterns [JERP]
ISSN: 2757-9344

June, 2023
Volume 4, No 1
<http://www.jerpatterns.com>

The JERP is a refereed journal and has a double-blind review. Any manuscript submitted for consideration in publication in the JERP is reviewed by at least two international reviewers with expertise in the relevant subject area.

The JERP is published twice a year in the June and December months.

Publisher and Editor:

Dr. Yalçın TÜKEL
Necmettin Erbakan
University
Konya, Turkey
ytukel@erbakan.edu.tr

Journal of Education and
Recreation Patterns [JERP] is
indexed in Education Full Text
(H. W. Wilson) Database
Coverage List, Google Scholar,
İdealonline, Crossref, Road,
Türk Eğitim İndeks, Proquest
Exlibris, EBSCO, ASOS indeks

JOURNAL OF EDUCATION AND RECREATION PATTERNS

JOURNAL MANAGER

[Dr. Abdullah Sencer Temel](#), Sport Management, Konya, Türkiye

EDITOR

[Dr. Yalçın Tükel](#), Department of Recreation Management, Tourism Faculty,
Necmettin Erbakan University, Konya, Türkiye

EDITORIAL BOARD

[Dr. Bülent Gürbüz](#), Chair, Turkish Leisure Studies and Research Association World
Leisure Organization, Turkish Sport Sciences Associations, Türkiye

[Dr. Kristine Fleming](#), Florida A&M University-Dept. of Health, Physical Education &
Recreation USA

[Dr. Ana Lúcia Silva](#), Human Kinetics University, University of Lisbon, Portugal

[Dr. Marko Turk](#), University of Tyumen, School of Advanced Studies, Russian Federation

[Dr. Christiaan Daniel Jacobs](#), Higher Learning Africa (HLA), South Africa

[Dr. Ratko Pavlović](#), University of East Sarajevo, Faculty of Physical Education and Sport
East Sarajevo, Bosnia and Herzegovina

[Dr. Wycliffe Wekesa Njororai Simiyu](#), University of Texas at Tyler, United States

[Dr. David Bellar](#), Department of Kinesiology University of North Carolina at Charlotte,
United States

[Dr. Babatunde Oyapero](#), Seneca College, King City, Ontario., Canada

[Dr. Eleonora Mihaylova Mileva](#), National Sports Academy Sofia, Bulgaria, Bulgaria

[Dr. Vaiva Zuzeviciute](#), Mykolas Romeris University, Lithuania

[Dr. Hikmat Abdulkarim Almadhkhori](#), Mustansiriyah University, Iraq

[Dr. Cornelius Hendrik van Heerden](#), Tshwane University of Technology South Africa,
South Africa

[Dr. Fred Lunenburg](#), Education at Sam Houston State University, USA

[Dr. Cynthia Martinez Garcia](#), Educational Leadership, Sam Houston State University,
USA

[Dr. Fatma Arslan](#), Department of Recreation Management, Tourism Faculty, Necmettin
Erbakan University, Konya, Türkiye

[Dr. Kazimierz Waluch](#), Instytut Rozwoju Sportu i Edukacji Management Faculty, Pawel
Wlodkowic University College, Poland

[Dr. Zsuzsanna Kneffel](#), University of Physical Education, Hungary

[Dr. Iryna Skrypchenko](#), Dnipropetrovsk State University of Internal Affairs, Department
of Physical Education, Ukraine

[Dr. Shawkat Gaber Radwan Mansour](#), Faculty of Physical Education, Suez Canal
University, Egypt, Egypt

[Dr. Emilia Alaverdov](#), Faculty of Law and International Relations, Georgian Technical
University. Tbilisi, Georgia

[Dr. Ahmet Uzun](#), Department of Physical Education, Faculty of Education, Necmettin
Erbakan University, Konya, Türkiye

*Journal of Education and
Recreation Patterns [JERP]*
ISSN: 2757-9344

June, 2023
Volume 4, No 1
<http://www.jerpatterns.com>

The JERP is a refereed journal and has a double-blind review. Any manuscript submitted for consideration in publication in the JERP is reviewed by at least two international reviewers with expertise in the relevant subject area.

The JERP is published twice a year in the June and December months.

Publisher and Editor:

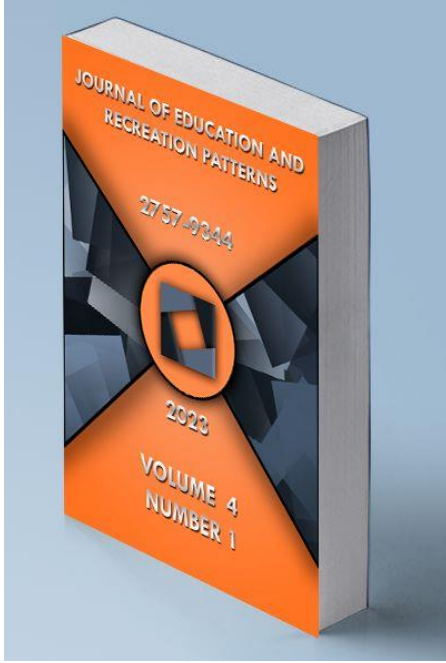
Dr. Yalçın TÜKEL
Necmettin Erbakan University
Konya, Turkey
ytukel@erbakan.edu.tr

Journal of Education and
Recreation Patterns [JERP] is
indexed in Education Full Text
(H. W. Wilson) Database
Coverage List, Google Scholar,
İdeonline, Crossref, Road,
Türk Eğitim İndeks, Proquest
Exlibris, EBSCO, ASOS indeks

[Dr. Mohammed Elgammal](#), Department of Theories & Applications of Team Sports, Faculty of Physical Education 'male', Zagazig University, Egypt
[Dr. Mehmet Demirel](#), Department of Recreation Management, Tourism Faculty, Necmettin Erbakan University, Konya, Türkiye
[Dr. Kenan Erdağı](#), Department of Physical Education, Faculty of Education, Necmettin Erbakan University, Konya, Türkiye
[Dr. Sarah Stokowski](#), Clemson University, Department Of Educational And Organizational Leadership Development, USA
[Dr. Matthew Ohlson](#), University of North Florida, United States
[Dr. Saba Zaidi](#), Sardar Bahadur Khan Women's University Quetta, Balochistan, Pakistani, India
[Dr. Seth E. Jenny](#), Slippery Rock University of Pennsylvania, United States
[Dr. Ye \(Sandy\) Shen](#), California Polytechnic State University, United States
[Dr. Brian Strong](#), Carleton University, Canada
[Dr. Peyton J Stensland](#), University of Cincinnati, CECH- School of Human Services, Ohio, USA
[Dr. Lazar Toskić](#), Faculty of Sport and Physical Education, University of Priština in Kosovska Mitrovica, Serbia
[Dr. Jenalee Hinds](#), College of Education at Northern Kentucky University, United States
[Dr. Debolina Halder Adhya](#), JIS University, United Arab Emirates
[Dr. Brian Forist](#), Indiana University School of Public Health-Bloomington, United States
[Dr. Scott S. Grant](#), The University of Findlay
[Dr. Tiffany Monique Ouash](#), International Water Safety Foundation, United States
[Dr. B. Cecile Reynaud](#), Florida State University, United States
[Dr. Holly J Bean](#), University of Southern Maine, Portland, Maine, United States
[Dr. Colin G. Pennington](#), Department of Sport Science, Tarleton State University, USA
[Dr. Laura Miele](#), Adjunct Faculty, Department of Recreation and Sport Pedagogy, Ohio University, USA
[Dr. Erin McNary](#), University of Miami (USA), United States
[Dr. Simon Paul Atkinson](#), New Zealand
[Dr. Joshua S. Greer](#), Bethel University (TN), USA., United States
[Dr. William Hunter Holland](#), University of North Carolina at Wilmington
[Dr. Soyoungh An](#), Surrey International Institute, Dongbei University of Finance and Economics, China
[Dr. Muhammad Shoaib](#), Assistant Professor Department of Sociology, University of Gujrat, Pakistan, Pakistan
[Dr. Simon Marwood](#), School of Health Sciences Liverpool Hope University Liverpool L16 9JD, United Kingdom
[Dr. Andrew Thomas Kemp](#), University of Nebraska at Kearney, United States
[Dr. R. Ram Mohan Singh](#), Department of Physical Education and Sports, Pondicherry University, Puducherry, India
[Dr. Susan Ryan](#), California University of Pennsylvania, United States
[Dr. James Raleigh Hagler](#), Middle Georgia State University, United States
[Dr. Sean Daly](#), Johnson & Wales University, United States
[Dr. Andrea Diaz](#), Leisure Studies Institute, University of Deusto, Bilbao, Spain, Spain
[Dr. Kwangho Park](#), Sport Management, Troy University, USA, United States
[Dr. Dalia Mostafa Abdulrahman](#), Faculty of Education for Early Childhood-Cairo University, Egypt
[Dr. Christine Challen](#), Lecturer, Educator, Faculty of Medical Sciences, Newcastle University, Newcastle, UK
[Dr. Jason Perry](#), Howard University, United States



CONTENTS		Pages
	Inside cover	i
	Generics Page	ii
	Contents	iv
Articles		
1.	Investigation of Serious Leisure Time Perceptions of Street Basketball Players in Terms of Different Variables	1-13
2.	The Relationship Between School Administrators' Supportive Leadership Behaviors and Organizational Citizenship According to Teacher Perceptions	14-30
3.	The Effect of Faculty of Sports Sciences Students' Unemployment Concerns on Academic Self-Efficiency	31-45
4.	Investigation of the Relationship Between Physical Activity Level and Sleep Quality of Secondary School Students	46-57
5.	The Role of Participation in Sports and Physical Activity in The Effects Of Negative Emotions and COVID-19 on Quality of Life	58-74
6.	Replicating Inclusivity: The Relationship between Directors' Cup Rankings and LGBTQI+ Inclusive NCAA Athletic Departments	75-86
7.	The Effect of Deviced Respiratory Muscle Exercises Applied to Smokers and Non-Smokers on Respiratory Functions	87-98
8.	The Relationship of Dorsiflexion Angle with Leg Volume, Balance, Speed, and Change of Direction Performance in Amateur Soccer Players	99-115
9.	Netflix In Leisure: A Qualitative Research On Users View	116-133
10.	Examining ESL Preservice Teachers' Personal Factors That Best Predict Their Confidence to Integrate Technology in Future Classrooms	134-152
11.	"It's a Complicated Conversation": Ncaa Division III Athletic Administrators' Perceptions of Adaptive Sports	153-168
12.	Digital Literacy, Digital Addiction and Life Satisfaction: Research of Judo Athletes	169-180
13.	Examination of the Stress Factors Experienced by Coaches	181-191
14.	Resilience through Recreation: How College Students' Recreational Behavior at a Hispanic-serving Institution in New York City Mediated Negative Emotions after the First Year of the COVID-19 Pandemic	192-209
15.	Investigation of the Relationship between the Life Studies Lesson Attitudes and Critical Thinking Tendencies of Primary School 3rd-Grade Students	210-228
16.	Examination of the Service Quality Perceptions and Academic Engagement Levels of the Students of the Faculty of Sport Sciences	229-247
17.	Examining the Levels of Social Skills and Sports Ethics of Sports Science Students in terms of Different Variables Perspective	248-262



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

A Study on the Serious Leisure Time Perceptions of Street Basketball Players in Terms of Different Variables

Nihal AKOĞUZ YAZICI¹

To cite this article:

Akoğuz Yazıcı, N. (2023). A Study on the Serious Leisure Time Perceptions of Street Basketball Players in Terms of Different Variables. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 01-13.

DOI: <https://doi.org/10.53016/jerp.v4i1.79>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Nihal Akoğuz Yazıcı, Assistant Professor, Recep Tayyip Erdoğan University, Faculty of Sport Sciences
nihal.akoguz@erdogan.edu.tr, <https://orcid.org/0000-0002-4766-140X>

**A Study on the Serious Leisure Time Perceptions of Street Basketball Players
in Terms of Different Variables****Nihal Akoğuz Yazıcı¹****ARTICLE INFORMATION**

Original Research Paper

Received 16.12. 2022

Accepted 12.03. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1**Pages:** 01-13**ABSTRACT**

The aim of this study is to investigate the serious leisure perceptions of people with different characteristics who participate in street basketball. The study group consists of a total of 278 participants taking a part in street basketball activities in the outdoor basketball courts on the coastline of Samsun, Ordu, Giresun, Trabzon, Rize and Artvin provinces situated in the Black Sea region of Turkey. A survey form, prepared by using a personal information form and a serious leisure scale-short form, was used to obtain the research data. Designed by Gould et al. (2011), the Serious Leisure Scale was adapted into Turkish by Isik et al. (2020). The SPSS 26.0 statistical package program was used in all statistical calculations and the findings were considered significant at the $p < 0.05$ level. As a result of the analyses, some significant differences were found between the sub-dimensions of the serious leisure scale and the participants' age, job status, levels of participation, sports spans, and leisure intervals.

Keywords: Leisure Time, Serious Leisure, Street Basketball

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

Robert Stebbins, supplying the phenomenon “Serious Leisure Perspective” in the literature (1982), had decided on that title because of similar statements he had heard frequently and emphatically from many participants in his long-term qualitative research. Stebbins (1982) introduced the concept of “being serious” to the leisure literature which had been mentioned to emphasize the importance of leisure in sentences such as “I’m serious about my archaeology,” by an amateur who, for several years, had been passionately pursuing his science, and “What we are doing here is not church-league stuff. Many of us hope to be scouted by the pros and maybe get an offer” by an amateur baseball player.

As a result of his ethnographic studies, Stebbins (1997) defined serious leisure as “the systematic pursuit of an amateur, hobbyist, or volunteer core activity that is highly substantial, interesting, and fulfilling and where, in the typical case, participants find a career in acquiring and expressing a combination of its special skills, knowledge, and experience” (Akyildiz, 2013; Gould et al., 2008; Gould et al., 2011; Stebbins, 2007, Shen & Yarnal, 2010). However, Stebbins stated that the definition of serious leisure did not fit within the definition of leisure and emphasized that people who engaged in broader contextual activities in their leisure and those who took pleasure in leisure activities more satisfactorily were serious leisure participants (Isik et al., 2020).

Stebbins identified six specific characteristics of serious leisure participants compared to an indifferent leisure participant. Accordingly, serious leisure participants;

- persist in leisure activity (persevere),
- make a personal and significant effort,
- want to achieve a leisure career,
- provide tangible and lasting benefits,
- try to create a social world consisting of original norms, beliefs or value system, and become a member of that social community,
- A strong bond is formed between them and the chosen activity. (Stebbins, 2007; Stebbins, 2016).

After this perspective emerged and started to develop, it has attracted the attention of many researchers and has been the subject of many studies. The main reason for this is the level of benefit that serious participation in a leisure activity provides. Many studies have shown that serious leisure activities make an important contribution to one's self-actualization, empowerment, self-expression, renewal / revitalization, sense of achievement, self-perception, social interaction and belonging, personal development, social skills, and social interaction processes in the society (Patterson, 1997, 2000, 2001; Aitchison, 2003; Kleiber, 1996; Rokervd, 1998, Patterson & Pegg, 2009; Isik et al., 2019). For example, it has been revealed that the elderly people get away from loneliness and social isolation thanks to serious leisure activities, and the positive effects of serious leisure activities on their psychological well-being have been proven (d’Araújo & Fonseca, 2019; Yang et al., 2019). On the other hand, tourism activities appear as an area where we can follow the serious leisure perspective in the most comfortable way (Frash & Blose, 2019; Kim et al., 2019; Williams & Slak-Valek, 2019).

Research has also been conducted to directly reveal the social interaction, which is one of the benefits of serious leisure time. Lee (2019) mentioned about the effect of being a serious leisure time participant in creating a social world. Also, Heidari et al. (2019) evaluated the in-group leisure behaviours in terms of serious leisure perspective. Cantillon and Baker (2019) stated that individuals who volunteer in museums and archives develop culturally, and volunteering provides them many benefits. Furthermore, Stone (2019) emphasized the serious leisure pass-time attribution in his study on individuals who keep cats and compete with each

other for their cuteness. As well, Rampley and Cordingley (2019) analyzed the creative writing experience in terms of the characteristics of serious leisure time.

Over the past 10 years serious leisure time studies have been done within the framework of certain groups which were former golfers, disabled people, athletes, event participants, dancers, firefighters, volunteers, adventure tourists, and football fans. The common thought in all these nine groups was that serious leisure time participation provided personal (emotional) and social benefits to the participants (Kim et al., 2011). Personal benefits include personal empowerment, self-actualization and self-expression, self-perception, satisfaction, pleasure, regeneration (recreation), and financial return. Social benefits, on the other hand, include social interaction, group success, contribution to the development and sustainability of the group, and contribution to becoming a needed and altruistic person (Isik, 2014; Isik, 2017; Isik, 2018).

After creating the theoretical framework of serious leisure time, scientists working in the social sciences have found a foothold about explaining the social and psychological benefits of the serious leisure perspective within the group. As the benefits of serious leisure time have been demonstrated within the diversity of activities, researchers from different social sciences have often put the serious leisure perspective at the center of their studies. All these studies are strongly interconnected. Although they have been conducted in different fields, there is a strong connection between them in terms of their outputs as they take that perspective as their basis. Researchers have produced many studies in different areas such as tourism (Matteucci & Filep, 2017; Humphreys & Weed, 2014; Komppula & Suni, 2013), ethnicity (Sivan et al., 2019), life satisfaction (Brajša-Žganec et al., 2011; Pressman et al., 2009; Yang et al., 2019; Isik et al., 2019), retirement (Stebbins, 2001; Kelly, 1997) and people with disabilities (Aitchison, 2003; Patterson, 2001).

As known, basketball is a game played between two teams of five players who score points by throwing a large ball over an open net suspended from a metal ring. Basketball was first introduced by a Canadian named James W. Naismith in December 1891. Although basketball is basically an indoor sport, it has moved to 3x3 basketball outdoor courts and city centers. First referred to as "street basketball", the game has gained popularity, especially among young people, and is today widely recognized as the number one urban team sport (FIBA, 2020). The fact that it takes place outdoors, is quite simple to participate in, and is unique as a recreational activity makes street basketball a very different sport from other team sports. Street basketball received such great interest among the society that 3x3 basketball, as an autonomous sport discipline, was decided by the Executive Board of the International Olympic Committee (IOC) to be included in the Olympic program starting from the Tokyo 2020 Olympic Games (FIBA, 2017). In other words, street basketball is an autonomous sport and an Olympic basketball discipline today. Leisure activities are a multidimensional and very important time period for the physical, mental and spiritual development of young people (Passmore & French, 2001). It is known that especially the physical, mental and spiritual developments and social behaviours of young people participating in outdoor activities increase positively and their self-confidence improves as well (McAvoy, 2001).

Taken from this perspective, given the broad perspective of serious leisure and both the recreational and professional aspects of street basketball, revealing the serious leisure time participation levels in terms of the different variables of the people who participate in these activities can provide significant benefits both to the perspective and to the street basketball. In this sense, the aim of this study is to investigate the serious leisure time perceptions of people in terms of their different characteristics.

The main research question is as follows: Do serious leisure time perceptions of individuals participating in street basketball events vary according to gender, age, occupation, level of participation, duration of sports and leisure time?

METHOD

Research Pattern

Relational research model, one of the quantitative research methods, was used in this study. This model is used to determine whether there is a variation between more than one variable (Buyukozturk, 2015).

Study Group

The study group consists of a total of 278 participants taking a part in street basketball activities in the outdoor basketball courts on the coastline of Samsun, Ordu, Giresun, Trabzon, Rize and Artvin provinces in the Black Sea region of Turkey.

In this study, convenience sampling method was preferred. Convenience sampling is the easiest, least costly, and easiest to implement (Islamoglu & Alniacik, 2019). The fact that it provides easier access to the individuals living in the Black Sea region can be shown among the reasons for choosing this sampling method.

Data Collection

A survey form, prepared by using a personal information form and a serious leisure scale-short form, was used to obtain the research data. Participants filled out the survey forms in the recreation areas where they play basketball. Data were collected between June and October 2022.

Ethics committee permission was obtained for the study with the decision number 2022/256 from the Non-Invasive Clinical Research Ethics Committee on 25.11.2022. During the current research, it was acted within the framework of "Higher Education Institutions Scientific Research and Publication Ethics Directive".

Data Collection Tools

Personal Information Form

The personal information form was prepared by the researcher to determine the independent variables such as gender, age, job status, participation level, licensed sports duration, leisure time preferences and weekly leisure time.

Serious Leisure Scale - Short Form

In the initial development stages of the serious leisure time scale, 18 different features of serious leisure time, in other words, 18 different sub-dimensions were revealed. Gould et al. (2011) state that SLIM with 18 factors consists of 2 basic components. These are 6 sub-dimensions related to the level of seriousness (perseverance, personal effort, career progress, career contingencies, identity with the pursuit, and unique ethos) and individual achievements that we can define as benefits. Gould et al. (2011) also divided individual achievements into two. While personal achievements (benefits) consist of 9 sub-dimensions (personal enrichment, self-actualization, self-expression abilities, self-expression individuality, enhanced self-image, self-gratification satisfaction, self-gratification enjoyment, re-creation, and financial return), the group achievements (benefits) consist of 3 sub-dimensions (group attraction, group accomplishments, and group maintenance). The short form of the serious leisure time scale was formed by taking one question from each sub-dimension of the scale, which consists of 18 sub-dimensions and 54 questions. This short form obtained comprises 3 sub-dimensions.

The Serious Leisure Scale, designed by Gould et al. (2011), was adapted into Turkish by Isik et al. (2020), and validity and reliability tests were conducted by them as well. As a

result of the analysis, it was determined that this scale, adapted to measure the serious leisure tendencies of individuals, has 18 items and a 3-factor structure. It was observed that the internal consistency coefficients calculated for these sub-dimensions were high;

- Seriousness $\alpha= 0.903$
- Personal benefit $\alpha= 0.906$
- Social benefit $\alpha= 0.955$

A 5-point Likert-type rating was used in the scale items (1: Strongly Disagree, 2: Disagree, 3: Undecided, 4: Agree, 5: Strongly Agree).

Data Analysis

The SPSS 26.0 statistical package program was used in all statistical calculations and the findings were considered significant at the $p<0.05$ level. Kolmogorov-Smirnov and Shapiro-Wilk tests were applied to see whether the data conformed to the normal distribution, and it was seen that the normality assumption was met. Independent Sample T Test was used to examine whether the sub-dimension scores of the scale differ by gender and job status while One Way Anova Test was applied to determine if the scores differ by age, participation level, licensed sports year, and leisure time. Subsequent to the Anova test, Tukey multiple comparison test was used to determine between which groups there was a difference.

Table 1. Kolmogorov-Smirnov and Shapiro-Wilk tests

Sub-dimensions	Statistic	df	Sig.
Seriousness	,116	278	,200
Personal Benefit	,077	278	,200
Social Benefit	,134	278	,200

FINDINGS

The findings of the research were analyzed in two parts. While the demographic characteristics of the participants are included in the first part, the statistical test findings are included in the second part. Table 2 includes the demographic characteristics of the participants.

Table 2. Descriptive Statistics of Participants

Variable	Group	n	%	Variable	Group	n	%
Gender	Female	45	16,2	Job	Employed	75	27,0
	Man	233	83,8		Student	203	73,0
Age	17 years and under	84	30,2	Participation Level	Recreational	96	34,5
	18-25 years	128	46,0		Amateur	147	52,9
	26 years and over	66	23,7		Professional	35	12,6
Leisure Preferences	Active Activities	110	39,6	Licensed Sports	Did not play	35	12,6
	Inactive Activities	168	60,4		1-5 Years	84	30,2
Leisure Duration	1-5 hours	84	30,2		6-10 Years	98	35,3
	6-10 hours	108	38,8		11-15 Years	42	15,1
	11 hours and over	86	30,9		16 Years and over	19	6,8

83.8% of the participants were male (n=233) and 45% were female (n=45). Of the participants, 46% were between the ages of 18-25 (n=128), 30.2% were aged 17 and under (n=84), and 23.7% were aged 26 and over (n=66). 73% of the participants were students (n=203) and 27% were employees (n=75). 52.9% of the participants participated in basketball as amateurs (n=147), while 34.5% participated recreationally (n=96), and 12.6% participated

professionally (n=35). 35.3% of the participants had a sports background of between 6-10 years (n=98), 30.2% had between 1-5 years (n=84), 15.1% had between 11-15 years (n= 42), 6.8% had 16 years or more (n=19), while 12.6% (n=35) had no sports history. 38.8% of the participants had a leisure time of between 6-10 hours (n=108), 30.9% had between 11 hours and over (n=86), and 30.2% of them had between 1-5 hours (n=84). 39.6% of the participants mentioned that they participate in active activities such as nature and adventure activities or sports activities (n=110) while 60.4% of them stated that they participate in inactive activities (n=168) such as playing on the phone, visiting the mall, or watching TV in their leisure time.

Table 3. Serious Leisure Scale Sub-Dimensional Levels by Gender

Sub-dimensions	Gender	N	Mean	SD	SD	t	p
Seriousness	Female	45	4,33	0,51	276	-1,120	0,264
	Male	233	4,41	0,46			
Personal Benefit	Female	45	4,17	0,44	276	-0,460	0,646
	Male	233	4,20	0,40			
Social Benefit	Female	45	4,43	0,49	276	0,108	0,914
	Male	233	4,42	0,53			

The serious leisure scale sub-dimension scores by gender were examined using the Independent T-Test and no significant difference was found in the seriousness, personal benefit and social benefit sub-dimensions (p>0,05).

Table 4. Serious Leisure Scale Sub-Dimensional Levels by Age

Sub-dimensions	Age	N	Mean	SD	SD	F	p
Seriousness	17 years and under	84	4,48	0,47	2,275	2,677	0,071
	18-25 years	128	4,39	0,44			
	26 years and over	66	4,31	0,50			
Personal benefit	17 years and under	84	4,11	0,39	2,275	3,636	0,02* 3>1
	18-25 years	128	4,21	0,41			
	26 years and over	66	4,28	0,39			
Social benefit	17 years and under	84	4,35	0,63	2,275	1,311	0,271
	18-25 years	128	4,47	0,45			
	26 years and over	66	4,44	0,48			

*p<0,05, **n: number of participants, SD: Standard deviation, 1: 17 years and under, 2: 18-25 years,3: 26 years and over

Serious leisure scale sub-dimension scores by age were examined using the One-Way Anova Test and a significant difference was determined in the personal benefit sub-dimension (F_{2,275}: 3,636; p<0,05) while no difference was found in the seriousness and social benefit sub-dimensions (p>0,05). In the personal benefit sub-dimension, the scores of those aged 26 and over were significantly higher than the scores of those aged 17 and under.

Table 5. Serious Leisure Scale Sub-Dimensional Levels by Job Status

Sub-dimensions	Job Status	N	Mean	SD	SD	t	p
Seriousness	Employed	75	4,29	0,50	276	-2,506	0,013*
	Student	203	4,44	0,45			
Personal benefit	Employed	75	4,27	0,40	276	1,874	0,062
	Student	203	4,17	0,40			
Social benefit	Employed	75	4,45	0,48	276	0,534	0,594
	Student	203	4,41	0,53			

*p<0,05, **n: number of participants, SD: Standard deviation

Serious leisure scale sub-dimension scores by job status were examined using the Independent T Test and a significant difference was determined in the seriousness sub-dimension ($t_{276}: -2,506; p < 0,05$) while no difference was found in the personal benefit and social benefit sub-dimensions ($p > 0,05$). In the seriousness sub-dimension, the scores of the students were found significantly higher than the scores of the employed participants.

Table 6. Serious Leisure Scale Sub-Dimensional Levels by Participation Level

Sub-dimensions	Participation Level	N	Mean	SD	SD	F	p
Seriousness	Recreational	96	4,36	0,52	2,275	1,010	0,365
	Amateur	147	4,44	0,41			
	Professional	35	4,36	0,52			
Personal benefit	Recreational	96	4,25	0,42	2,275	5,045	0,007* 3>2
	Amateur	147	4,13	0,39			
	Professional	35	4,33	0,34			
Social benefit	Recreational	96	4,42	0,54	2,275	0,071	0,932
	Amateur	147	4,42	0,52			
	Professional	35	4,46	0,45			

* $p < 0,05$, **n: number of participants, SD: Standard deviation, 1: Recreational, 2: Amateur, 3: Professional

Serious leisure scale sub-dimension scores by participation level were examined using the One-Way Anova Test and a significant difference was determined in the personal benefit sub-dimension ($F_{2,275}: 5,045; p < 0,05$) while no difference was found in the seriousness and social benefit sub-dimensions ($p > 0,05$). In the personal benefit sub-dimension, the scores of the professionals were significantly higher than the scores of the amateurs.

Table 7. Serious Leisure Scale Sub-Dimensional Levels by Sports Span

Sub-dimensions	Sports Span	N	Mean	SD	SD	F	p
Seriousness	Did not play	35	4,47	0,41	4,273	0,661	0,620
	1-5 Years	84	4,40	0,47			
	6-10 Years and over	98	4,35	0,47			
	11-15 Years	42	4,43	0,51			
	16 Years and over	19	4,47	0,38			
Personal benefit	Did not play	35	4,11	0,38	4,273	4,012	0,004* 5>1, 5>2, 4>2
	1-5 Years	84	4,10	0,40			
	6-10 Years	98	4,21	0,39			
	11-15 Years	42	4,31	0,44			
	16 Years and over	19	4,42	0,35			
Social benefit	Did not play	35	4,41	0,50	4,273	0,855	0,491
	1-5 Years	84	4,35	0,59			
	6-10 Years	98	4,44	0,51			
	11-15 Years	42	4,51	0,43			
	16 Years and over	19	4,52	0,44			

* $p < 0,05$, **n: number of participants, SD: Standard deviation, 1: Did not play, 2: 1-5 Years, 3: 6-10 Years, 4: 11-15 Years, 5: 16 Years and over

Serious leisure scale sub-dimension scores by sports span were examined using the One-Way Anova Test and a significant difference was determined in the personal benefit sub-dimension ($F_{4,273}: 4,012; p < 0,05$) while no difference was found in the seriousness and social benefit sub-dimensions ($p > 0,05$). In the sub-dimension of personal benefit, the scores of those

with 12 years or more sports background were found significantly higher than the scores of those with 1-5 years of sports history and those who had no sports background. On the other hand, the scores of those with 11-15 years of sports history were found significantly higher than the scores of the participants who had a sports background between 1-5 years.

Table 8. Serious Leisure Scale Sub-Dimensional Levels by Leisure

Sub-dimensions	Leisure	N	Mean	SD	SD	F	p
Seriousness	1-5 hours	84	4,22	0,47	2,275	12,268	0,000* 3>1, 2>1
	6-10 hours	108	4,42	0,45			
	11 hours and over	86	4,56	0,41			
Personal benefit	1-5 hours	84	4,14	0,44	2,275	1,367	0,257
	6-10 hours	108	4,22	0,38			
	11 hours and over	86	4,23	0,39			
Social benefit	1-5 hours	84	4,33	0,57	2,275	2,074	0,128
	6-10 hours	108	4,48	0,47			
	11 hours and over	86	4,45	0,51			

*p<0,05, ** number of participants, SD: Standard deviation, 1: 1-5 hours, 2: 6-10 hours, 3: 11 hours and over

Serious leisure scale sub-dimension scores by leisure time were examined using the One-Way Anova Test and a significant difference was determined in the seriousness sub-dimension (F_{2,275}: 12,268; p<0,05) while no difference was found in the personal benefit and social benefit sub-dimensions (p>0,05). In the sub-dimension of seriousness, the scores of those with 11 hours or more of leisure time were significantly higher than those with 1-5 hours, and those with 6-10 hours of leisure time were significantly higher than the scores of those with 1-5 hours.

DISCUSSION AND CONCLUSION

When the literature is examined, it has been seen that individuals participating in different sports branches are examined in terms of serious leisure time (Goklemen, 2019; Karakucuk, 2019; Ozant, 2020.) In the current study, it has been aimed to reveal the serious leisure time perceptions of people who participate in street basketball which increases its popularity day by day in terms of both being a recreational and Olympic sport.

The short version of the scale was applied in this study and it was observed that there were both similarities and differences with the studies carried out using the standard version of the scale form. No significant difference was found between the sub-dimensions of the serious leisure time scale short form in terms of gender. According to the test results of Isik's study (2014), in which the serious leisure time scale generated by Akyildiz (2013) was used, it was observed that there were significant differences between female (N=327) and male (N=479) participants' scores of "feeling of efficacy" (z=-3.397; p<0.05) and "personality" (z=-2.016; p<0.05) sub-dimensions. It was found that female participants' sense of competence subscale scores were significantly higher than male participants' scores, and male participants' personality subscale (4.0176 ± .798) scores were significantly higher than female participants' personality subscale scores. In the study conducted by Akyildiz (2013), it is seen that male and female participants do not differ from each other in terms of being serious or indifferent leisure time participants with regards to the activities they chose. The main reason why no difference was found in this study may also be the fact that the participant number of the female sample group, which can be considered a limitation of the study, was not as high as the male sample group. It is thought that the social structure of the Blacksea region, where the study was conducted, caused this situation. In addition, the absence of any significant difference between

the sub-dimensions indicates that the female participants of street basketball in this region receive as much personal and social benefits as the male participants do. This is important in terms of recognizing the benefits that serious female participants of the region gain from street basketball.

Additionally, some significant differences emerged in the personal benefit sub-dimension of the serious leisure time scale in terms of the age of the participants. Accordingly, the personal benefits of the participants aged 26 and over were found to be significantly higher than the personal benefits of individuals aged 17 and under. It can be inferred that the recreational activities provide much more benefit to relatively aged people than they do to the young. Studies on participation in serious leisure activities and conscious aging support our study as well (Stebbins, 2001; Kelly, 1997). Studies have also shown that more disadvantaged groups gain more benefits than non-disadvantaged groups serious leisure activities (Isik, 2017). In this sense, a serious participation in leisure activities for healthy and conscious aging will pave the way to get benefits significantly (Heo et al., 2013).

A significant number of students participated in our study as many students participate in this event where street basketball is played. The most basic fact that distinguishes students from those who have a profession is that they do not earn money from a particular subject. In the 18 sub-scale form of the seriousness sub-dimension in SLIM, there are sub-dimensions such as career progress and career contingencies. In other words, participants with a high level of seriousness aim to earn a certain amount of money in the future from the activities they participate in. This is the main reason why students score higher than the employed. As a matter of fact, as Isik et al. (2019) stated, the main reason for those who voluntarily participate in the serious leisure perspective is the possibility of obtaining a career related to this job in the future. Stebbins (1992) explains this within the P-A-P (professional-amateur-public) system in his book 'Amateurs, Professionals, and Serious Leisure'. Every leisure participant is primarily public, as they begin to develop, they become amateur first and then professional. At the time he becomes a professional, he is no longer a leisure time participant. Being professional means making money and benefiting from any work in a certain way. The financial return sub-dimension, which is included in the 18 sub-scales, is involved in the personal benefit sub-dimension. The fact that professional players in our study gain significantly more personal benefits than the participants who participate in recreational activities may result from the abovementioned case. Likewise, it is also the main reason why the level of personal benefit significantly increases as the duration of participation in serious leisure activities or the free time one spends on street basketball increases. The more one participates in the serious leisure activities, the more personal benefits can be gained. There are also studies that show that the benefit obtained from doing different activities for long leads to a certain improvement (Misener et al., 2010; Heo& Lee, 2010; Liu, 2014)

As a result, the leisure time perceptions of the people participating in the street basketball activity, a serious endeavour in Turkey in recent years, are affected by some variables (leisure time, sport span, participation level, job status and age). When these variables are examined, it is seen that the variations show similarity with other studies in the literature. In other words, street basketball can contribute to people significantly just like other leisure activities. In areas like Blacksea Region where recreational opportunities are newly developing, street basketball may be regarded as an important leisure time activity for the participants and can lead to significant benefits.

Only street basketball players in a certain region were included in this study. In future studies, serious leisure participation of street basketball players from different regions can be compared. In addition, serious leisure participation of participants in different sports branches can be compared.

REFERENCES

- Aitchison, C (2003). *Gender and leisure: Social and cultural perspectives*. Routledge. London and New York.
- Akyildiz, M. (2013). The relationship between serious and casual participants' personality characteristics with leisure satisfaction and life satisfaction. Phd Thesis, University of Anadolu, Institute of Health Sciences, Eskisehir.
- Brajša-Žganec, A., Merkaš, M., & Šverko, I. (2011). Quality of life and leisure activities: How do leisure activities contribute to subjective well-being?. *Social Indicators Research*, 102(1), 81-91. Doi: 10.1007/s11205-010-9724-2.
- Buyukozturk, Ş. (2015). *Hand book of data analysis, Statistics, research design, SPSS applications and comment*. Ankara: Pegem Publishing.
- Cantillon, Z., & Baker, S. (2019). Serious leisure and the DIY approach to heritage: Considering the costs of career volunteering in community archives and museums. *Leisure Studies*, 1-14. Doi: <https://doi.org/10.1080/02614367.2019.1694571>.
- d'Araújo, M. A., & Fonseca, J. R. S. (2019). Serious Leisure as a Strategy to Reduce Loneliness and Social Isolation: A Preventive Response to Elderly Women Abuse. In *Violence Against Older Women, Volume II* (pp. 143-164). Palgrave Macmillan, Cham.
- FIBA (2017). From the Streets to the Olympics. Retrieved from: <http://www.fiba.basketball/news/from-the-streets-to-the-olympics>
- FIBA (2020). History. Retrieved from: <https://fiba3x3.com/en/vision.html>
- Frash Jr, R. E., & Blöse, J. E. (2019). Serious leisure as a predictor of travel intentions and flow in motorcycle tourism. *Tourism Recreation Research*, 1-16. Doi: <https://doi.org/10.1080/02508281.2019.1626118>.
- Goklemen, T.U. (2019). Analysing the persons serious leisure who attend archery sport. Master's thesis, University of Akdeniz, Institute of Social Sciences, Antalya.
- Gould, J., Moore, D., Karlin, N. J., Gaede, D. B., Walker, J., Dotterweich, A. R. (2011) Measuring serious leisure in chess: Model confirmation and method bias. *Leisure Sciences*, 33(4), 332-340. Doi: <https://doi.org/10.1080/01490400.2011.583165>.
- Gould, J., Moore, D., McGuire, F., & Stebbins, R. (2008). Development of the serious leisure inventory and measure. *Journal of Leisure Research*, 40(1), 47-68. Doi: <https://doi.org/10.1080/00222216.2008.11950132>.
- Heidari, K., Heydarinejad, S., Saffari, M., & Khatibi, A. (2019). Investigating the leisure behavior of Iranians: The structural model of serious leisure, recreation specialization and place attachment. *Journal of Policy Research in Tourism, Leisure and Events*, 1-17. Doi: <https://doi.org/10.1080/19407963.2019.1694030>.
- Heo, J., & Lee, Y. (2010). Serious leisure, health perception, dispositional optimism, and life satisfaction among senior games participants. *Educational Gerontology*, 36(2), 112-126. Doi: <https://doi.org/10.1080/03601270903058523>.
- Heo, J., Stebbins, R. A., Kim, J., & Lee, I. (2013). Serious leisure, life satisfaction, and health of older adults. *Leisure Sciences*, 35(1), 16-32. Doi: <https://doi.org/10.1080/01490400.2013.739871>.
- Humphreys, C. J., & Weed, M. (2014). Golf tourism and the trip decision-making process: The influence of lifestage, negotiation and compromise, and the existence of tiered decision-making units. *Leisure Studies*, 33(1), 75-95. Doi: <https://doi.org/10.1080/02614367.2012.739635>.
- Isik, U. (2014). Investigation of personality traits to serious leisure participants in school of physical education and sports. Master's thesis. University of Dumlupinar, Health Sciences Institute, Kütahya.
- Isik, U. (2017). The role of serious leisure participation and hearing impairment in recognising different emotions (with dimensions of personality and emotional intelligence). Doctoral thesis. University of Dumlupinar, Health Sciences Institute, Kütahya.

- Isik, U. (2018). How to be a serious leisure participant? (A Case Study). *Journal of Education and Training Studies*, 6(9), 146-151. <https://doi.org/10.11114/jets.v6i9.3453>
- Isik, U., Kalkavan, A., & Demirel, M. (2019). Psychological well-being and happiness in terms of seriousness level of participation in serious leisure activities. 2nd International Recreation and Sports Management Congress, Bodrum.
- Isik, U., Kalkavan, A., & Demirel, M. (2020). Examining factor structure of serious leisure inventory short form (18-items) for turkey sample: Validity and reliability study, *Spormetre-The Journal of Physical Education and Sport Sciences*, 18(3), 136-145. Doi: 10.33689/spormetre.693678.
- Islamoglu, A. H., & Alniacik, U. (2014). *Research methods in social sciences*. İstanbul: Beta Publications.
- Karakucuk, S., Durhan, T. A., Aksin, K., Goral, Ş., & Akgul, B. M. (2019). Serious leisure perspective of orienteering athletes. *Spormetre Journal of Physical Education and Sport Sciences*, 17(4), 296-318. Doi: <https://doi.org/10.33689/spormetre.593719>.
- Kelly, J. R. (1997). *Activity and ageing: Challenge in retirement. Work, leisure and well-being*. Routledge, 165-179.
- Kim, H. H., Park, I., & Bae, J. S. (2019). Happy campers? The relationships between leisure functioning, serious leisure, and happiness. *Social Behavior and Personality: An International Journal*, 47(11), 1-9. Doi: <https://doi.org/10.2224/sbp.8270>.
- Kim, J., Dattilo, J., & Heo, J. (2011). Taekwondo participation as serious leisure for life satisfaction and health. *Journal of Leisure Research*, 43(4). Doi: <https://doi.org/10.1080/00222216.2011.11950249>.
- Kleiber, D.A. (1996). Personal expressiveness and the transcendence of negative life events. Paper presented at the 4th World Congress of Leisure Research, World Leisure and Recreation Association, Cardiff, Wales.
- Komppula, R., & Suni, J. (2013). Identifying hunting tourist types—an exploratory case study from Finland. *Tourism Review*, 68(1), 48-61. Doi: <https://doi.org/10.1108/16605371311310075>.
- Lee, K. (2019). Serious leisure is social: Things to learn from the social world perspective. *Journal of Leisure Research*, 1-11. Doi: <https://doi.org/10.1080/00222216.2019.1633233>.
- Liu, H. (2014). Personality, leisure satisfaction, and subjective well-being of serious leisure participants. *Social Behavior and Personality: An International Journal*, 42(7), 1117-1125. Doi: <https://doi.org/10.2224/sbp.2014.42.7.1117>.
- Matteucci, X., & Filep, S. (2017). Eudaimonic tourist experiences: The case of flamenco. *Leisure Studies*, 36(1), 39-52. Doi: <https://doi.org/10.2224/sbp.2014.42.7.1117>.
- McAvoy L. (2001). *Outdoors for everyone: opportunities that include people with disabilities*. *Parks and Recreation*. 36(8), 24-36.
- Misener, K., Doherty, A., & Hamm-Kerwin, S. (2010). Learning from the experiences of older adult volunteers in sport: A serious leisure perspective. *Journal of Leisure Research*, 42(2), 267-289. Doi: <https://doi.org/10.1080/00222216.2010.11950205>.
- Ozant M.I. (2020). *Recreational activity expectations of amateur footballs as a serious leak time activity*. University of Dumlupınar, Graduate School of Education, Kutahya.
- Passmore A., French D. (2001). Development and administration of a measure to assess adolescents' participation. *Adolescence*. 36(141), 67-75.
- Patterson, I. (1997). Serious leisure as an alternative to a work career for people with disabilities. *Australian Disability Review*, 2, 20-27.
- Patterson, I. (2000). Developing a meaningful identity for people with disabilities through serious leisure activities. *World Leisure Journal*, 42(2), 41-51. Doi: <https://doi.org/10.1080/04419057.2000.9674185>.

- Patterson, I. (2001). Serious leisure as a positive contributor to social inclusion for people with intellectual disabilities. *World Leisure Journal*, 43(3), 16-24. Doi: <https://doi.org/10.1080/04419057.2001.9674234>.
- Patterson, I., & Pegg, S. (2009). Serious leisure and people with intellectual disabilities: Benefits and opportunities. *Leisure Studies*, 28(4), 387-402. Doi: <https://doi.org/10.1080/02614360903071688>.
- Pressman, S. D., Matthews, K. A., Cohen, S., Martire, L. M., Scheier, M., Baum, A., & Schulz, R. (2009). Association of enjoyable leisure activities with psychological and physical well-being. *Psychosomatic Medicine*, 71(7). Doi: 10.1097/PSY.0b013e3181ad7978.
- Rampley, H., Reynolds, F., & Cordingley, K. (2019). Experiences of creative writing as a serious leisure occupation: An interpretative phenomenological analysis. *Journal of Occupational Science*, 1-13. Doi: <https://doi.org/10.1080/14427591.2019.1623066>.
- Roker, D., Player, K., & Coleman, J. (1998). Challenging the image: The involvement of young people with disabilities in volunteering and campaigning. *Disability and Society*, 13, 725-741. Doi: <https://doi.org/10.1080/09687599826489>.
- Shen, X.S., Yarnal, C. (2010). Blowing open the serious leisure-casual leisure dichotomy: What's in there?. *Leisure Sciences*, (32) 162-179. Doi: <https://doi.org/10.1080/01490400903547179>.
- Sivan, A., Tam, V., Siu, G., & Stebbins, R. (2019). Adolescents' choice and pursuit of their most important and interesting leisure activities. *Leisure Studies*, 38(1), 98-113. Doi: <https://doi.org/10.1080/02614367.2018.1539867>.
- Stebbins, R. A. (1992). *Amateurs, professionals, and serious leisure*. Montreal, QC & Kingston, ON: McGill-Queen's University Press.
- Stebbins, R. A. (2001). Serious Leisure. *Society*, 38(4), 53-57. Doi: 10.1007/s12115-001-1023-8.
- Stebbins, R. A. (2016). *The interrelationship of leisure and play: Play as leisure, leisure as play*. Springer.
- Stebbins, R.A. (1982). Serious Leisure: A Conceptual Statement. *The Pacific Sociological Review*, 25(2), April, 251-272. Doi: <https://doi.org/10.2307/1388726>
- Stebbins, R.A. (2007). *Serious Leisure, A perspective for Our Time*, Transaction Publishers. New York, NY: New Brunswick.
- Stebbins, R.A. (1997). Casual leisure: A conceptual statement. *Leisure Studies*, 16, 17-25. Doi: <https://doi.org/10.1080/026143697375485>.
- Stone, E. (2019). What's in it for the cats?: Cat shows as serious leisure from a multispecies perspective. *Leisure Studies*, 1-13. Doi: <https://doi.org/10.1080/02614367.2019.1572776>.
- Williams, R. B., & Slak-Valek, N. (2019). Pokémon GO is serious leisure that increases the touristic engagement, physical activity and sense of happiness of players. *Information Technology & Tourism*, 1-19. Doi: <https://doi.org/10.1007/s40558-019-00153-2>.

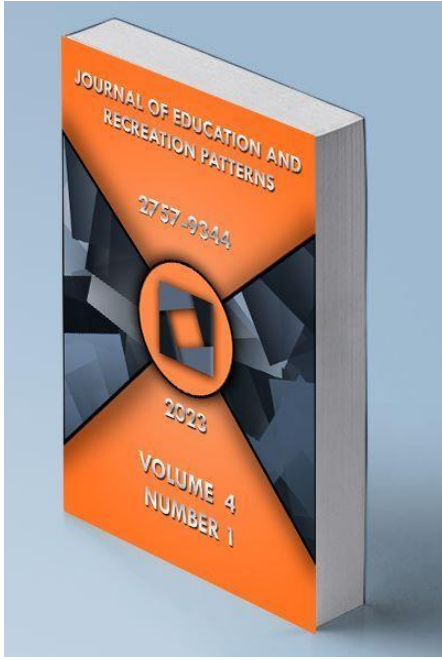
Copyright: © 2023 (Akoğuz Yazıcı, N.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com


The Relationship Between School Administrators' Supportive Leadership Behaviors and Organizational Citizenship According to Teacher Perceptions

Ramazan ERTÜRK¹

To cite this article:

Ertürk, R. (2023). The Relationship Between School Administrators' Supportive Leadership Behaviors and Organizational Citizenship According to Teacher Perceptions. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 14-30. DOI: <https://doi.org/10.53016/jerp.v4i1.61>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Dr. Ramazan ERTÜRK, Ministry of National Education, koroglu522@hotmail.com,  <https://orcid.org/0000-0002-8140-0895>

The Relationship Between School Administrators' Supportive Leadership Behaviors and Organizational Citizenship According to Teacher Perceptions

Ramazan Ertürk¹

ARTICLE INFORMATION

Original Research Paper

Received 16.10.2022

Accepted 19.03.2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 14-30

ABSTRACT

The research, which aims to determine the relationship between the supportive leadership behaviors of school administrators and organizational citizenship according to teacher perceptions, was designed in the relational survey model, which is one of the quantitative research methods. The study population of the research consisted of 465 teachers working in primary schools in the city center of Bolu in the 2021-2022 academic year, and valid data were obtained from 306 teachers. Supportive leadership scale and organizational citizenship scales were used to collect data in the research. Parametric tests were used because the research data showed normal distribution. According to the results of the research, teachers' perceptions of school administrators' supportive leadership behaviors and organizational citizenship perceptions are high. According to another result of the study, there is a moderately positive and significant relationship between the supportive leadership behaviors of school administrators and organizational citizenship. Supportive leadership is a significant predictor of organizational citizenship. School administrators, as supportive leaders, can help teachers with their problems related to their lessons, make an effort to create a quality and peaceful working environment for teachers, make constructive criticism and create a fair working environment at school, be open to teachers' opinions and suggestions, appreciate their success, and enable their organizational citizenship behaviors to emerge. In order to ensure continuity in the supportive leadership behaviors of school administrators, it will be good to ensure continuity in their professional development. In this regard, they can participate in in-service trainings, workshops, panels and symposiums and congresses related to their fields.

Keywords: Leadership, Organizational Citizenship, Supportive Leadership, Teacher



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

In the 21st century, there is constant change and innovation in the world. In addition to their legal duties and responsibilities, it is very important for schools to achieve their goals by integrating these innovations and changes into educational practices, and to make extra efforts in presenting educational activities to students in a qualified way. The quality of education will increase if teachers help students during rest times, take care of the classes of absent teachers, bring them to class on time and use the time effectively, organize extra-curricular activities and take part in the activities. Because it can be said that school administrators are very important for teachers to fulfill these behaviors. Because school administrators can lead, encourage and guide all school stakeholders in cultural, economic and social sense. As a matter of fact, in schools where there is a school principal who focuses on solving teachers' problems, makes constructive criticism, listens to teachers, appreciates their success, strives to provide them with a good working environment, and acts fairly and equally, teachers are expected to display extra-role behaviors outside of their legal duties. Therefore, it is thought that there is a relationship between the supportive behaviors of school administrators and organizational citizenship.

The foundation of supportive leadership is based on the path-goal theory, which is one of the ideas about leadership put forward by House and Mitchell (1974). This theory is based on four basic leadership styles. These, they are directive leadership, participatory leadership, success-oriented leadership and supportive leadership styles. Since supportive leadership involves paying attention to employees and responding to their personal needs (Rafferty & Griffin, 2004), it is similar to individualized attention, which is a sub-dimension of transformational leadership. In addition, supportive leadership refers to individual evaluation, career advice, career monitoring and contribution to development, and orientation to education (Bass, 1985). Supportive leadership is a behavior that addresses the needs and preferences of employees, is concerned about their well-being, and fosters an organizational environment of pleasant and friendly relations (House & Mitchell, 1974), a behavior that focuses on meeting the needs and well-being of employees and creating a comfortable organizational climate for interaction leadership style (Shin et al., 2016). Needs, well-being and climate are geared towards social and emotional support, which manifests itself mostly in leader behavior. The behavior of the leader is sympathy, caring, listening, etc. may be in the form of (Dyananti et al., 2022). Supportive leadership refers to the extent to which leaders support their followers through active participation in solving difficult situations, being open, honest, and fair in their interactions (Schmidt et al., 2014).

Supportive leaders are aware of their duties and responsibilities and can encourage their subordinates; they create a favorable working environment to encourage respect, trust, cooperation and emotional support (Daft, 2005; Gibson, Ivancevich & Donnelly, 2000). Supportive leaders, who try to create a friendly climate in a sensitive organization, reward the achievements of their subordinates, respect them, treat everyone equally, are friendly and approachable (House, 1971; Leana, 2013; Northouse, 2010) they improve job performance while preventing them from rising (Rowold & Schlotz, 2009). Supportive leaders, while meeting the needs of employees, also aim to develop a positive attitude towards them and gain confidence (Yu, 2017). Supportive leaders, who take into account the rewards and emotional states of employees (Lin & Lin, 2021), are friendly towards their employees and provide psychological support, information and material support (Yelamanchili, 2019). Supportive leaders care about the welfare and human needs of their subordinates and strive to make the job more enjoyable for their subordinates (Jones & George, 2011; Northouse, 2010). It can be said that when employees see a supportive attitude from their leaders, they will work more selflessly. It can be stated that the supportive behaviors of the administrators in schools will enable teachers to exhibit behaviors that will contribute to the success of the students and the school, as well as their official duties. This situation emphasizes

organizational citizenship.

Organizational citizenship, one of the basic characteristics of which is behavior that is not formally rewarded by the organization, was used for the first time in the literature by Bateman and Organ (1983) (Dipaola & Neves, 2009). Organizational citizenship behavior increases organizational functionality, is not explained in the official job and job description, is a volunteer who directly or indirectly makes positive contributions to the employee and the organization, whose boundaries are not clearly defined and does not require any sanction when not fulfilled, and employees exhibit more than what is expected from them (Aytürk, 2019; Çelik, 2007), which is very important in terms of organizational success and progress, is expressed as behaviors that occur voluntarily and consist of extra efforts rather than defined tasks and expectations (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). All situations in which the employee strives beyond the expectations of the employer can be considered as organizational citizenship behavior (Kumari & Thapliyal, 2017). The focus of these behaviors is the behaviors exhibited by the employee voluntarily and in order to contribute to the social and psychological environment of the organization (Lievens & Anseel, 2004).

The dimensions of organizational citizenship, which aims to have an effective process to achieve organizational goals, also provide organizational solidarity and integrity (Titrek, Bayrakçı, & Zafer, 2009). It has been examined in five dimensions by organizational citizenship dimensions. These; altruism, civic virtue, conscientiousness, courtesy and courtesy. Altruism is the behavior of helping other employees voluntarily and preventing organizational problems. Civic virtue is the behavior of participating voluntarily in organizational decision-making processes, educational activities, social activities, boards and commissions, and participating in activities that will contribute to the benefit and image of the organization. Conscientiousness is the behavior that increases the effectiveness of both the individual and the group he/she is in, with behaviors such as going beyond what is expected by everyone, using time effectively, coming to work on time, continuing to work, using business hours effectively. Courtesy, which includes behaviors that help prevent problems that may arise, consists of exemplary behaviors such as warning, informing and reminding colleagues. Gentlemanship, on the other hand, is when employees work without complaining when faced with difficulties and difficult work (Organ, 1988; Podsakoff et al., 2000).

The organizational citizenship behaviors of the employees strengthen the social structure of the institution and decrease the disagreements within the institution (Sezgin, 2005). The social mechanism of the organization is facilitated, conflicts are minimized, organizational efficiency and productivity increase (Organ, 1988), it positively affects the individual's performance and organizational efficiency, contributes to the effectiveness of the organization, and has a positive effect on the performance evaluations and career success of the employees (Allison, Voss & Dryer, 2001). As the tendency of the employees to show organizational citizenship behavior increases, it will be easier to reach the organizational goals and the level of success will increase (Demir, 2014). Organizational citizenship behavior, besides contributing to organizational communication, provides protection and efficient use of resources, increasing the service and product produced, directing the time correctly, and thus organizational savings and profitability. In addition, negative situations such as intention to leave the job, delegating the job to others or absenteeism are less common in employees who display organizational citizenship behavior (Podsakoff et al., 2000; Polat, 2007).

It can be said that it is not enough for the teachers, who are at the central point, to fulfill their official duties, but to exhibit extra behaviors beyond these duties in order for the schools to be effective and successful. Because, helping teachers with a workload, following academic and pedagogical developments, sharing related practices with colleagues, guiding new colleagues, being willing to participate in activities that are not included in the curriculum contribute to the formation of a positive school climate and increase organizational efficiency (Belogolovsky & Somech, 2010; Runhaar, Konermann, & Sanders, 2013). Teachers who have internalized and adopted organizational citizenship behaviors in schools continue to do their jobs with self-sacrifice, without giving up the obstacles they may experience, avoid all approaches that may have a negative impact on the educational atmosphere they work in, stay away from gossip, and pay attention to avoid harmful actions (Burns & Carpenter, 2008). Teachers who show organizational citizenship behavior are constantly improving themselves personally and professionally, in order to be more productive to students, to contribute more and to reach the school's goals in a shorter time than expected; He strives to make sure that his lessons are in the most effective way, he tries to make the programs, lessons and social activities in his schools extra efficient and effective, and he regularly shares his ideas and suggestions (DiPaola, Tschannen-Moran, 2001; DiPaola & Hoy, 2005). The display of organizational citizenship behavior by teachers, which contributes to individual and organizational effectiveness, contributes positively to the effectiveness of the school, educational success, and communication among employees (Sezgin, 2005). Teachers' organizational citizenship behavior enables the lessons to be more efficient and effective, the emergence of a high-quality planning and program, colleague assistance, and the teachers to work in cooperation with the teachers without showing intimidation (Allison, Voss, & Dryer, 2001; Bogler & Somech, 2005; Nguni, Slegers, & Denessen, 2006). Adhering to a strong team spirit and behaving with the will and awareness of "us", they become more beneficial to their institutions by showing more than expected, willingness, self-sacrifice and self-sacrifice (Bogler & Somech, 2005).

When the literature is examined, job satisfaction of supportive leadership (Arzi & Farahbod, 2014; Asamani et al., 2016; Chih et al., 2018; Kazemi & Corlin, 2020; Kulkarni, 2017; Shin et al., 2016), job performance (Hwang et al., 2015), innovative behavior (Janssen, 2005), extra role performance (Euwema et al., 2007), person-organization fit (Sökmen et al., 2015), intention to stay at work (Asamanie et al., 2016), organizational commitment (Şama & Kolamaz, 2011), school effectiveness (Namlı, 2017), task performance (Shin et al., 2016), absenteeism and presenteeism (being absent at work) (Schmid et al., 2017), development of professional skills (Yu, 2017) employee voice (Elsaied, 2019) appears to be related to organizational climate (Kazemi & Corlin, 2020) and supportive climate (Kim et al., 2021). Therefore, the limited number of studies on supportive leadership in educational organizations in Turkey and abroad and the fact that supportive leadership is associated with many organizational behaviors reveals the originality of the research. In this study, it was aimed to determine the relationship between school administrators' supportive leadership behaviors and organizational citizenship according to teacher perceptions. For this purpose, answers to the following questions were sought:

- 1-What is the level of teachers' perceptions of school administrators' supportive leadership behaviors and organizational citizenship?
- 2- Is there a significant relationship between the supportive leadership behaviors of school administrators and organizational citizenship?
- 3- Is the supportive leadership behavior of school administrators a significant predictor of teachers' organizational citizenship behaviors?

METHOD

Research Design

The research, which aims to determine the relationship between the supportive leadership behaviors of school administrators and organizational citizenship according to teacher perceptions, was designed in the relational survey model, which is one of the quantitative research methods. In the relational screening model, the researcher can investigate both the correlations between the variables and the effect of the independent variable(s) on the dependent variable(s) (Mertens, 2010). Ethical approval for this research was obtained from the Ethics Committee of Human Research in Social Sciences, Bolu Abant İzzet Baysal University, with the decision dated 27.06.2022 and numbered 2022/292.

Study Group and Sample

The study population of the research consisted of 465 teachers working in primary schools in the city center of Bolu in the 2021-2022 academic year. Since it was aimed to reach the entire universe of the study in the research, sampling was not used and valid data were obtained from 306 teachers. This number indicates that the acceptable number of teachers has been reached within the scope of the study population and sample sizes (Ural & Kılıç, 2005). The scales were delivered to the researchers online. 45.4% of the teachers were female (n=139), 54.6% were male (n=167); 88.6% (n=271) were at undergraduate level, 11.4% (n=35) were at postgraduate level; 17% are 20-30 years old (n=52), 31.4% are 31-40 years old (n=96), 35.3% are 41-50 years old (n=108) 16.3% are 51 and over (n=50).

Data Collection Tools

Supportive leadership scale and organizational citizenship scales were used to collect data in the research.

Supportive Leadership Scale

The supportive leadership scale was developed by Hoy (1991) and its reliability and validity studies were conducted by Çankaya and Aküzüm (2010). The four-point Likert scale is rated as rarely (1), sometimes (2), often (3), and very often (4). The scale consists of 9 items and one sub-dimension. The Cronbach Alpha internal consistency coefficient of the scale was determined as .89 by Çankaya and Aküzüm (2010), and the Cronbach Alpha coefficient calculated in this study was determined as .84.

Organizational Citizenship Scale

The organizational citizenship scale developed by DiPaola, Tarter and Hoy (2005) was adapted into Turkish by Taşdan and Yılmaz (2008). Consisting of one dimension and 12 items, the scale was developed in a five-point Likert style. The Cronbach Alpha internal consistency coefficient of the scale was calculated as .87 by Taşdan and Yılmaz (2008). The Cronbach Alpha coefficient of the scale calculated in this study is .89. In this context, it can be said that the reliability coefficient of the scales are high. The five-point Likert scale is evaluated as 1.00-1.80 "very low", 1.81-2.60 "low", 2.61-3.40 "moderate", 3.41-4.20 "high", 4.20-5.00 "very high".

Analysis of Data

The data obtained in the research were analyzed using the SPSS 22 program. Skewness and Kurtosis coefficients were calculated to examine whether the data showed a

normal distribution. As a result of the examination, the total scores of the Supportive Leadership Scale (Skewness: -,281; Kurtosis: ,473) and the Organizational Citizenship Scale (Skewness: -,590; Kurtosis: ,352) were found to be between +1.5 and -1.5. Therefore, the values of kurtosis and skewness between +1.5 and -1.5 indicate that the data show a normal distribution (Tabachnick & Fidell, 2013). In this sense, parametric tests were used in this study.

In the study, the Durbin-Watson coefficient was between 1.5-2.5 (d=2.32); r coefficients are lower than .80 (.63); It was determined that the variance magnification factor value varied between 6.21 and 2.88 (below VIF:10), and the tolerance values were between .29 and .54 (greater than 0.2). These values show that there is no autocorrelation, multiple collinearity and correlation problem in the study (Field, 2009; Kalaycı, 2009; Stevens, 2009; Tabachnick & Fidell, 2013).

Ethical review board name: Ethics Committee of Human Research in Social Sciences, Bolu Abant İzzet Baysal University. Date of ethics review decision: 27.06.2022, Ethics assessment document issue number: 2022/292

FINDINGS

In this section, teachers' perceptions of school administrators' supportive leadership behaviors and organizational citizenship, the relationship between supportive leadership and organizational citizenship, and the findings of supportive leadership's predictive level of organizational citizenship are included.

Teachers' perceptions of school administrators' supportive leadership behaviors and organizational citizenship are given in Table 1.

Table 1. Teachers' Perceptions of School Administrators' Supportive Leadership Behaviors and Organizational Citizenship

Scales	N	\bar{x}	SS
Supportive leadership	306	3.81	0.41
Organizational citizenship	306	4.13	0.76

When Table 1 is examined, it has been determined that teachers' perceptions of school administrators' supportive leadership behaviors (\bar{x} =3.81) and organizational citizenship perceptions (\bar{x} =4.13) are high. These findings show that school administrators, as supportive leaders, help teachers with their problems related to their lessons and make an effort to work peacefully, they make constructive criticisms towards teachers, they listen to teachers effectively, they treat teachers equally, they are open to teachers' suggestions and they appreciate teachers; It can be interpreted that teachers help students in their personal time, help new teachers, are willing and willing to take part in extra-curricular activities and committees, use their class time effectively, share information with their colleagues, and make constructive criticisms for the improvement of the school.

The results of the Pearson Correlation Coefficient for determining the relationships between teachers' school administrators' supportive leadership behaviors and organizational citizenship perceptions are given in Table 2.

Table 2. Correlation Analysis Results for the Relationship Between Supportive Leadership and Organizational Citizenship

Scale	Organizational citizenship
Supportive leadership	0.63**

*p<.01**. The correlation was significant at the 0.01 level (2-tailed). Absolute value correlation coefficient: 0.71-1.00 high; 0.70-0.31 medium; 0.30-0.00 indicates a low level of relationship (Büyüköztürk, 2011).

When Table 2 is examined, a moderately positive and significant relationship ($r=.63$; $p<0.01$) was found between the supportive leadership behaviors of school administrators and organizational citizenship according to teacher perceptions. This finding can be explained by the fact that with the increase in the supportive leadership behaviors of school administrators, teachers' organizational citizenship behaviors will also change in the same direction.

The regression results for the predictive level of organizational citizenship behaviors of school administrators' supportive leadership behaviors are given in Table 3.

Table 3. Regression Results for the Predictive Level of Organizational Citizenship by Supportive Leadership

Independent variable	The dependent variable Organizational citizenship		
	β	t	p
Constant	2.57	3.56	0.00*
Supportive leadership	0.83	2.71	0.00*
		<i>F</i> 53.02	
		<i>p</i> 0.00*	
		<i>R</i> ² 0.44	

When Table 3 was examined, it was determined that the supportive behaviors of school administrators were a significant predictor of organizational citizenship ($F=53.02$; $p<0.01$). Reinforcing leadership behaviors of school administrators explain 44% ($R^2= 0.44$) of the total variance in teachers' perceptions of organizational citizenship. This finding shows that with the increase of supportive leadership behaviors of school administrators, organizational citizenship behaviors of teachers will also increase.

DISCUSSION AND CONCLUSION

According to the results of the research, teachers' perceptions of school administrators' supportive leadership behaviors are high. This result is very important in terms of supporting teachers by school administrators, who are at the most strategic point in influencing teachers. Because when employees are supported and empowered by leaders, they can provide valuable input to the school (Grant, 2011). It is claimed that the lack of support from administrators encourages teachers to leave their profession (Ingersoll, 2001).

Since the basis of supportive leadership is based on relationship-oriented behaviors, it is very important to consider the needs and feelings of employees, to accept them, and to deal with their needs (Yukl, Gordon & Taber, 2002). It is one of the most important roles of supportive leaders to support all of their positive behaviors by being in close relationship with all of the group members, to exhibit positive attitudes and behaviors in their criticism and feedback, and to make explanations while informing the employees (Okumuş, 2013). Therefore, supportive leader managers should know their human resources well, establish good relations with them and help them in solving the problems they encounter and in

achieving success in their work. In supportive leadership, employees show loyalty to their leaders regardless of financial or other power. Therefore, supportive leaders should create an organizational climate that will contribute to the development and business success of employees in line with organizational interests (Izgar, 2005). In schools where communication and interaction are very important, supportive leadership behaviors of school administrators gain importance in this sense. School administrators have important duties in supporting teachers, increasing their job satisfaction and creating a pleasant working environment at school. For example, when teachers lack confidence in their ability to complete a task and need motivation to keep going, school administrators create a friendly climate as supportive leaders and get to know teachers verbally. Also, supportive people in leadership show respect, treat everyone equally, and are concerned for the well-being of their subordinates. The supportive leader should use expertise to improve activities and school structures (Thuku, Jeremiah & Edward, 2018). When the literature is examined, it has been concluded that teachers' perception of supportive leadership is high in studies conducted by Quigney (2000) and Özdemir (2010). Çankaya and Aküzüm (2010), on the other hand, concluded in their study that teachers' perceptions of school administrators' supportive leadership behaviors were at the level of agree. In some studies (Abdurrezzak, 2015; Sarier, 2013; Özgözü, 2015), it has been concluded that school administrators often use supportive leadership, support teachers' professional development, and appreciate positive behaviors. Katıtaş, Doğan and Yıldız (2022), on the other hand, emphasized that school principals see their teachers' needs and wishes before them, value them, and are willing to support teachers' development.

According to the results of the research, teachers' perceptions of organizational citizenship are at a high level. Having a high level of organizational citizenship perception of teachers will increase the quality of education and training services offered to students and will ensure the success of students and therefore schools to be successful and effective. Because teachers who show high level of organizational citizenship behavior not only give importance to their professional development, but also support their students during rest hours, participate voluntarily in programs and activities other than teaching activities, develop suggestions and ideas for better quality education services, and help their colleagues. As a matter of fact, Burns and Carpenter (2008) emphasized that teachers with a high level of organizational citizenship behavior work with great devotion and effort by avoiding destructive, abrasive words, attitudes and behaviors that may negatively affect the school and working climate. Ertürk (2022) also emphasized that the effective use of resources by creating a positive school environment and the teachers' working in cooperation and taking part in other educational activities besides teaching works, will increase the success of the students and thus the efficiency of the school. In this context, it can be said that the organizational citizenship behaviors of teachers, one of the most important elements of schools, are very important in terms of organizational, managerial and individuality in schools.

Studies supporting the result of this research in the literature (Akdemir, 2018; Alarçin, 2020; Arlı, 2011; Çelik & Konan, 2021; Çimen, 2016; Ertürk, 2018; Ertürk, 2022; Mete & Serin, 2015; Somech & Ron, 2007; Sönmez & Cemaloğlu, 2017; Tabancalı & Çakiroğlu, 2017; Uslu & Balcı, 2012), besides teachers' organizational behaviors are at very high (Buluç, 2008; Çerezci, 2019) and moderate (Bogler & Somech, 2004; Kurtulmuş, 2016; Yılmaz, 2012) levels. There are studies that have concluded that The emergence of different results in the studies may be due to the fact that the studies were conducted in different places and sample groups, and the different management styles in the schools.

According to another result of the study, there is a moderately positive and significant relationship between the supportive leadership behaviors of school administrators and organizational citizenship. Supportive leadership is a significant predictor of organizational citizenship. Although there is no study in the literature that deals with supportive leadership

and organizational citizenship behavior together, Organ et al. (2006) emphasized that supportive leadership attitudes and behaviors and the leader's empowerment attitude affect organizational behavior. Namlı (2019) concluded that there is a moderately significant positive relationship between supportive leadership and collective trust and school effectiveness, and that supportive leadership has a significant effect on collective trust and school effectiveness. Şama and Kolamaz (2011) concluded that supportive and developing leadership characteristics positively affect the identification and internalization dimensions of organizational commitment; Çankaya and Aküzüm (2010) Çankaya and Aküzüm (2010) found that there is a positive relationship between supportive leadership and teachers' communication competencies, and that supportive leadership is a significant predictor of teachers' communication levels. Rallis and Goldring (2000), on the other hand, concluded that the supportive leadership roles of school administrators have a positive effect on teachers' professional solidarity and communication competencies. In addition, job satisfaction of supportive leadership (Arzi & Farahbod, 2014; Chih et al., 2018; Kazemi & Corlin, 2020; Kulkarni, 2017; Maurya & Agarwal, 2015; Shin et al., 2016; Sökmen et al., 2015), job performance (Hwang et al., 2015), innovative behavior (Janssen, 2005), extra role performance (Euwema et al., 2007), person-organization fit (Sökmen et al., 2015), intention to stay at work (Asamanie et al., 2016), organizational commitment (Şama & Kolamaz, 2011), school effectiveness (Namlı, 2017), task performance (Shin et al., 2016), absenteeism and presenteeism (not being at work) (Schmid et al., 2017), development of professional skills (Yu, 2017) employee voice (Elsaied, 2019) seems to be related to organizational climate (Kazemi & Corlin, 2020). As can be seen, leadership behaviors supportive of school administrators affect many organizational behaviors positively.

Organizational citizenship positively affects performance and organizational productivity, strengthens social relations by reducing conflicts in the organization (Sezgin, 2005). In this sense, a school administrator who wants to increase the individual performance of teachers at school, increase the efficiency of the school, reduce or prevent conflicts at school can create these positive situations by displaying supportive attitudes and behaviors towards teachers. Because supportive leadership behaviors both have a positive relationship with organizational citizenship and significantly predict organizational citizenship.

As a result, it is very important for teachers to help students and new teachers in their personal time, to take part in extra-curricular activities and boards, to use their time effectively, to share information with colleagues, to make constructive criticisms for the development of the school, and to increase the success level of students in the school's effectiveness and efficiency. On the other hand, supportive leadership behaviors of school administrators are an important and meaningful predictor of teachers' organizational citizenship behavior. Therefore, school administrators, as supportive leaders, help teachers with their problems related to their lessons, strive to create a quality and peaceful working environment for teachers, make constructive criticism, create a fair working environment at school, be open to teachers' opinions and suggestions, appreciate their success, and encourage the emergence of organizational citizenship behaviors. can provide. This situation, in addition to increasing the quality of the education offered to the students, will ensure the success of the students, the efficiency of the school and the formation of many positive outputs.

The following recommendations were developed within the scope of research findings and results:

1- In order to maintain the high level of supportive behavior of school administrators, school administrators; continue to help teachers solve their problems, listen to them when communicating with teachers, explain why when criticizing and make constructive criticism, strive to provide the resources teachers need and improve working conditions, treat teachers equally and fairly, thank teachers when necessary, should reward teachers, take into account the suggestions of teachers, support teachers to control their work and be autonomous in their

work.

2- In order to ensure continuity in the supportive leadership behaviors of school administrators, it will be good to ensure continuity in their professional development. In this regard, they can participate in in-service trainings, workshops, panels and symposiums and congresses related to their fields.

3- In order to reveal and increase teachers' organizational citizenship behaviors, school administrators should display supportive behaviors.

4- A qualitative research can be conducted to reveal the supportive leadership behaviors of school administrators.

Limitations of the Research

This research; It is limited to the answers given by 306 teachers working in primary schools in Bolu city center for the 2020-2021 academic year to the supportive leadership and organizational citizenship scales. The findings and results obtained in the research reflect the views of the teachers in the study universe.

REFERENCES

- Abdurrezzak, S. (2015). *Explore of teachers' perceptions on effective school and school leadership* [Master thesis], Cumhuriyet University.
- Akdemir, Y. (2018). *Evaluation of management behavior skills and organizational citizenship behaviors of teachers* [Master thesis], Okan University.
- Alarçin, S. (2020). *The relation between school principals' charismatic leadership behaviors and teachers' organizational citizenship behaviors* [Master thesis], Bahçeşehir University.
- Allison, B. J., Voss, R. S., & Dryer, S. (2001). Student classroom and career success: The role of organizational citizenship behavior. *Journal of Education for Business*, 76(5), 282-288.
- Arlı, D. (2011). *The examination of teachers' organizational citizenship behaviours regarding their culture perceptions and organizational trust level* [Doctoral dissertation], Cumhuriyet University.
- Arzi, S., & Farahbod, L. (2014). The impact of leadership style on job satisfaction: A study of Iranian hotels. *Interdisciplinary Journal of Contemporary Research in Business*. 6(3) 171-186.
- Asamani, J. A., Naab, F., & Ofei, A. M. A. (2016). Leadership styles in nursing management: implications for staff outcomes. *Journal of Health Sciences*, 6(1), 23-36. <https://doi.org/10.17532/jhsci.2016.266>
- Aytürk, N. (2019). *Organizational behavior organizational theories and practices* (1st ed.). Nobel.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. Free Press.
- Bateman, T. S., & Organ, D. W. (1983). Job satisfaction and the good soldier: the relationship between affect and employee citizenship. *Academy of Management Journal*, 26, 587-595.
- Belogolovsky, E., & Somech, A. (2010). Teachers' organizational citizenship behavior: Examining the boundary between in-role behavior and extra-role behavior from the perspective of teachers, principals and parents. *Teaching and Teacher Education*, 26(4), 914-923. <https://doi.org/10.1016/j.tate.2009.10.032>
- Bogler, R., & Somech, A. (2004). Influence of teacher empowerment on teachers' organizational commitment, professional commitment and organizational citizenship behavior in schools. *Teaching and Teacher Education*, 20(3), 277-289. <https://doi.org/10.1016/j.tate.2004.02.003>
- Bogler, R., & Somech, A. (2005). Organizational citizenship behavior in school: How does it relate to participation in decision making? *Journal of Educational Administration*, 43(5), 420-438. <https://doi.org/10.1108/09578230510615215>
- Buluç, B. (2009). The relationships between organizational commitment and leadership styles of principals based on elementary school teacher's perceptions. *Educational Administration: Theory and Practice*, 57, 5-34. Retrieved from <https://dergipark.org.tr/tr/download/article-file/108266>
- Burns, T., & Carpenter, J. (2008). Organizational citizenship and student achievement. *Journal of Cross-Disciplinary Perspectives in Education*, 1(1), 51-58. Retrieved from https://mxtsch.people.wm.edu/Teaching/JCPE/Volume1/JCPE_2008-01-08.pdf
- Büyüköztürk, Ş. (2011). *Manual of data analysis for social sciences*. PegemA Academy.
- Çelik, M. (2007). *Organizational culture and organizational citizenship behavior-an application* [Doctoral dissertation], Ataturk University.
- Çelik, O. T., & Konan, N. (2021). The relationship between school principals' empowering leadership with teachers' self-efficacy and organizational citizenship behaviors. *Education and Science*, 46(206), 241-261, <https://doi.org/10.15390/EB.2020.8841>

- Çerezci, Ç. (2019). *The relationship between teachers' organizational citizenship behaviours and their level of resistance to change* [Master thesis], Ondokuz Mayıs University.
- Chih, Y.-Y., Kiazad, K., Cheng, D., Emamirad, E., & Restubog, S. L. (2018). Interactive effects of supportive leadership and top management team's charismatic vision in predicting worker retention in the philippines. *Journal of Construction Engineering and Management*, 144(10), 04018095. [https://doi.org/10.1061/\(asce\)co.1943-7862.0001553](https://doi.org/10.1061/(asce)co.1943-7862.0001553)
- Çimen, İ. (2016). the relationship between teachers' perception of spiritual leadership and their organizational citizenship behaviours. *Journal of Dicle University Ziya Gökalp Faculty of Education*, 27, 9-19. <http://dx.doi.org/10.14582/DUZGEF.573>.
- Daft, R. L. (2005). *The leadership experience* (3th ed.). Thompson South Western.
- Dayanti, P. R., Eliyana, A., Emur, A. P., & Pratama, A. S. (2022). Supportive leadership: A literature review. *International Journal of Science and Management Studies (IJSMS)*, 5(2), 74-80. <https://doi.org/10.51386/25815946/ijms-v5i2p109>
- Demir, A. (2014). *School administrators antecedents of organizational citizenship behavior they use power supply* [Master thesis], Cumhuriyet University.
- DiPaola, M. F., & Hoy, W. (2005). Organizational citizenship of faculty and achievement of high school students. *The High School Journal*, 88(3), 35-44. <https://doi.org/10.1353/hsj.2005.0002>
- Dipaola, M. F., & Neves, P. M. M. (2009). Organizational citizenship behaviors in American and Portuguese public schools. *Journal of Educational Administration*, 47(4), 490-507. <http://dx.doi.org/10.1108/09578230910967464>
- DiPaola, M. F., & Tschannen-Moran, M. (2001). Organizational citizenship behavior in schools and its relationship to school climate. *Journal of School Leadership*, 11(5), 424-447. <https://doi.org/10.1177/1052684601011005>
- Elsaied, M. M. (2019). Supportive leadership, proactive personality and employee voice behavior: The mediating role of psychological safety. *American Journal of Business*, 34(1), 2-18. <https://doi.org/10.1108/AJB-01-2017-0004>
- Ertürk, R. (2018). Paternalist leadership behavior of school administrators, the relationship between organizational citizenship and emotional commitment perceptions. E. Babaoğlu, E. Kırıl, A. Çilek (Eds.), In *frames from education* (pp. 24-44). Eyuder Publishing.
- Ertürk, R. (2022). The relationship between school administrators' empowering leadership behaviors and teachers' perceptions of organizational citizenship. *Journal of Educational Leadership and Policy Studies*, 6(1), 1-26.
- Euwema, M. C., Wendt, H., & Van Emmerik, H. (2007). Leadership styles and group organizational citizenship behavior across cultures. *Journal of Organizational Behavior*, 28, 1035-1057. <https://doi.org/10.1002/job.496>
- Field, A. (2009). *Discovering statistics using SPSS* (3th ed.). Sage Publications Ltd.
- Gibson, J. L., Ivancevich, J. M., & Donnelly, J. H. (2000). *Organizations: Behavior, structure, processes* (10th ed.). McGraw-Hill.
- Grant, C. P. (2011). *Dissertation on the relationship between distributed leadership and leadership effectiveness*. North Carolina State University.
- House, R. J., & Mitchell, T. R. (1974). Path-goal theory of leadership. *Journal of Contemporary Business*, 3, 81-97.

- Hwang, S. J., Quast, L. N., Center, B. A., Chung, C T. N., Hahn, H. J., & Wohkittel, J. (2015). The impact of leadership behaviors on leaders' perceived job performance across cultures: Comparing the role of charismatic, directive, participative, and supportive leadership behaviors in the US and four Confucian Asian countries. *Human Resource Development International*, 18(3), 259-277. <https://doi.org/10.1080/13678868.2015.1036226>
- Ingersoll, R. M. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, 38(3), 499-534. Retrieved from https://repository.upenn.edu/gse_pubs/94
- Izgar, H. (2005). Educational leadership. A. M. Sünbül (Ed.), In *the world of the teacher* (pp. 23-39). Odunpazarı Municipality Publications.
- Janssen, O. (2005). The joint impact of perceived influence and supervisor supportiveness on employee innovative behavior. *Journal of Occupational and Organizational Psychology*, 78, 573-579. <https://doi.org/10.1348/096317905X25823>
- Jones, G., & George, K. (2011) *Contemporary management*. McGraw-Hill.
- Kalaycı, Ş. (2009). *SPSS applied multivariate statistics applications*. Asil Publishing.
- Katıtaş, S., Doğan, S., & Yıldız, S. (2022). The Effect of Servant Leadership Behaviors of School Principals on Teachers' Job Satisfaction. *Journal of Education and Recreation Patterns (JERP)*, 3(2), 01-20. <https://doi.org/10.53016/jerp.v3i2.48>
- Kazemi, A., & Corlin, TE (2020). Linking supportive leadership to satisfaction with care: proposing and testing a service-profit chain inspired model in the context of elderly care. *Journal of Health Organization and Management*, 35(4), 492-510. <https://doi.org/10.1108/JHOM-10-2020-0393>
- Kim, KY, Atwater, L., Jolly, P., Ugwuanyi, I., Baik, K., & Yu, J. (2021). Supportive leadership and job performance: Contributions of supportive climate, team-member exchange (TMX), and group-mean TMX. *Journal of Business Research*, 134, 661-674. <https://doi.org/10.1016/j.jbusres.2021.06.011>
- Kulkarni, S. M., (2018). The relationship between supportive leadership and employee satisfaction. *International Journal of Research in Business Management*, 6(2), 13-20.
- Kumari, P., & Thapliyal, S. (2017). Studying the impact of organizational citizenship behavior on organizational effectiveness. *Human Resource Management*, 4(1), 9-21.
- Kurtuluş, M. (2016). The effect of diversity management on teachers' organizational commitment and organizational citizenship behavior. *Pegem Journal of Education and Instruction* 6(3), 277-302, <http://dx.doi.org/10.14527/pegegog.2016.015>.
- LaRocco, J. M., & Jones, A. P. (1978). Co-worker and leader support as moderators of stress-strain relationships in work situations. *Journal of Applied Psychology*, 63(5), 629-634. <https://doi.org/10.1037/0021-9010.63.5.629>
- Leana, P. M. (2013). An investigation of path-goal theory, relationship of leadership style, supervisor-related commitment, and gender. *Emerging Leadership Journeys*, 6(1), 13-44.
- Lievens, F., & Anseel, F. (2004). Confirmatory factor analysis and invariance of an organizational citizenship behavior measure across samples in a dutch-speaking context. *Journal of Occupational and Organizational Psychology*, 77(3), 299-306. <https://doi.org/10.1348/0963179041752727>
- Lin, M., & Ling, Q. (2021). The role of top-level supportive leadership: A multilevel, trickle-down, moderating effects test in Chinese hospitality and tourism firms. *Journal of Hospitality and Tourism Management*, 46, 104-113. <https://doi.org/10.1016/j.jhtm.2020.11.013>
- Maurya, M. K., & Agarwal, M. (2015). Relationship between supportive leadership, mental health status and job satisfaction of civil police constables. *Journal of the Indian Academy of Applied Psychology*, 41(3), 103-111. Retrieved from

http://www.jiaap.org.in/Listing_Detail/Logo/839b11c7-22e5-4ff4-8d4d-721fde1fdee0.pdf

- Mertens, D. M. (2010). *Research and evaluation in education and psychology*. Sage Publications.
- Mete, Y. A., & Serin, H. (2015). Relationship between school administrators' paternalist leadership behaviours and teachers' organizational citizenship and organizational cynicism behaviours. *HAYEF Journal of Education*, 12(2), 147-159.
- Namlı, A. (2017). *Effects of high school principals' supportive leadership behaviors and collective trust on school effectiveness* [Doctoral dissertation], Firat University.
- Nguni, S., Slegers, P., & Denessen, E. (2006). Transformational and transactional leadership effects on teachers' job satisfaction, organizational commitment, and organizational citizenship behavior in primary schools: The Tanzanian case. *School Effectiveness and School Improvement, An International Journal of Research, Policy and Practice*, 17(2), 145-177. <https://doi.org/10.1080/09243450600565746>
- Northouse, P. G. (2010). *Leadership: Theory and practice* (5th ed.). Thousand Oaks, CA: Sage.
- Okumuş, K. (2013). *Relationship between leadership styles, organizational learning ability, innovation and firm performance* [Master's thesis]. Gebze Advanced Technology Institute.
- Organ, D. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington Books.
- Organ, D. W., Podsakoff, P. M., & MacKenzie, S. B. (2006). *Organizational citizenship behavior: Its nature, antecedents and consequences*. Thousand Oaks, CA: Sage.
- Özdemir, A. (2010). The relationship of perceived superior support and individualism/collectivism with organizational citizenship behaviors in primary schools. *Educational Administration: Theory and Practice*, 16(1), 93-112.
- Özgözü, S. (2015). *The relationship among administrators' leadership behaviours, knowledge management, organizational culture in educational organizations* [Doctoral dissertation], Ege University.
- Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, 26(3), 513-563. <https://doi.org/10.1177/014920630002600>
- Polat, S. (2007). *Relation between organizational justice perceptions, organizational trust levels and organizational citizenship behaviors of secondary education teachers* [Doctoral dissertation], Kocaeli University.
- Quigney, T. A. (2000). Effective school administration in an age of educational reform. *Mid-Western Educational Researcher*, 13(4), 21-27.
- Rafferty, A. E., & Griffin, M. A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *Leadership Quarterly*, 15, 329-354. <https://doi.org/10.1016/j.leaqua.2004.02.009>
- Rallis, F. S., & Goldring, E. B. (2000). *Principals of dynamic schools: Taking charge of change*. CA: Corwin Press.
- Rowold, J., & Schlotz, W. (2009). Transformational and transactional leadership and followers' chronic stress. *Leadership Review*, 9, 35-48. Retrieved from <https://eprints.soton.ac.uk/66060/>
- Runhaar, P., Konermann, J., & Sanders, K. (2013). Teachers' organizational citizenship behaviour: Considering the roles of their work engagement, autonomy and leader member exchange. *Teaching and Teacher Education*, 30, 99-108. <https://doi.org/10.1016/j.tate.2012.10.008>

- Şama, E., & Kolamaz, C. (2011). The relationship between supportive and developing leadership characteristics and organizational commitment. *Turkish Journal of Educational Sciences*, 9(2), 313-342.
- Sarier, Y. (2013). *Examination of the relations between the leadership of the principals of educational institutions and the school outputs using the meta-analysis method* [Doctoral dissertation], Eskişehir Osmangazi University.
- Schmid, J. A., Jarczok, M. N., Sonntag, D., Herr, R. M., Fischer, J. E., & Schmidt, B. (2017). Associations between supportive leadership behavior and the costs of absenteeism and presenteeism: An epidemiological and economic approach. *Journal of Occupational and Environmental Medicine*, 59(2), 141-147. <https://doi.org/10.1097/JOM.0000000000000919>
- Schmidt, B., Loerbroks, A., Herr, R. M., Wilson, M., Bosch, J. A., & Fischer, J. E. (2014). Associations between supportive leadership and employees self-rated health in an occupational sample. *International Journal of Behavioral Medicine*, 21(5), 750-756. <https://doi.org/10.1007/s12529-013-9345-7>
- Sezgin, F. (2005). Organizational Citizenship Behaviors: A Conceptual Analysis and Some Inferences for the Schools. *Gazi University Journal of Gazi Education Faculty*, 25(1), 317-339.
- Shin, Y., Oh, W. K., Sim, C. H., & Lee, J. Y. (2016). A multilevel study of supportive leadership and individual work outcomes: The mediating roles of team cooperation, job satisfaction, and team commitment. *Journal of Applied Business Research*, 32(1), 55-70. <https://doi.org/10.19030/jabr.v32i1.9523>
- Sökmen, A., Bitmiş, M. G., & Üner, M. M. (2015). The mediating role of person-organization fits in the supportive leadership-outcome relationships. *E an M: Economics a Management*, 18(3), 62-72. <https://doi.org/10.15240/tul/001/2015-3-006>
- Somech, A., & Ron, I. (2007). Promoting organizational citizenship behavior in schools: The impact of individual and organizational characteristics. *Educational Administration Quarterly*, 43(1), 38-66. <http://dx.doi.org/10.1177/0013161X06291254>
- Sönmez, E., & Cemaloğlu, N. (2017). The relationship between primary school teachers' occupational image perception and their organizational citizenship behaviors. *Abant İzzet Baysal University Journal of the Faculty of Education*, 17(4), 2117-2141.
- Stevens, J. P. (2009). *Applied multivariate statistics for the social sciences* (15th ed.). Routledge.
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Allyn and Bacon.
- Tabancalı, E., & Çakıroğlu, K. (2017). Relationship between ethical leadership of school principals and organizational citizenship behaviors of teachers. *Mersin University Journal of the Faculty of Education*, 13(1), 392-417. <http://dx.doi.org/10.17860/mersinefd.296254>
- Thuku, W., Jeremiah M. K., & Edward K. T. (2018). Relationship between supportive leadership style and teachers' job satisfaction in Nakuru County, Kenya. *European Journal of Education Studies*, 5(2), 280-292. <https://doi.org/10.5281/zenodo.1442819>
- Titrek, O., Bayrakçı, M., & Zafer, D. (2009). The perceptions of teachers' regarding organizational citizenship behaviors. *Academic Overview, International Refereed E-Journal of Social Sciences*, 17, 1-28.
- Ural, A., & Kılıç, İ. (2005). *Scientific research process and data analysis with SPSS*. Detay Publishing.

- Uslu, B., & Balcı, E. (2012). Relationship between primary school teachers' organizational citizenship behaviors and organizational communication perceptions, *Educational Administration: Theory and Practice*, 18(3), 461-489. Retrieved from <https://dergipark.org.tr/tr/download/article-file/108173>
- Yelamanchili, RK (2019). Impact of supportive leadership on perceived sales team cohesion: Mediation of critical thinking and moderation of empowerment. *International Journal of Business Excellence*, 18(4), 508–526. <https://doi.org/10.1504/IJBEX.2019.101533>
- Yılmaz, K. (2012). The relationship between primary school teachers' job satisfaction levels and organizational citizenship behaviors. *Anadolu Journal of Educational Sciences International*, 2(2), 1-14.
- Yu, P. L. (2017). Innovative culture and professional skills: The use of supportive leadership and individual power distance orientation in IT industry. *International Journal of Manpower*, 38(2), 198-214. <https://doi.org/10.1108/IJM-10-2014-0214>
- Yukl, G., Gordon, A., & Taber, T. (2002). A hierarchical taxonomy of leadership behavior: Integrating a half century of behavior research. *Journal of Leadership & Organizational Studies*, 9, 15-32. <http://dx.doi.org/10.1177/107179190200900102>

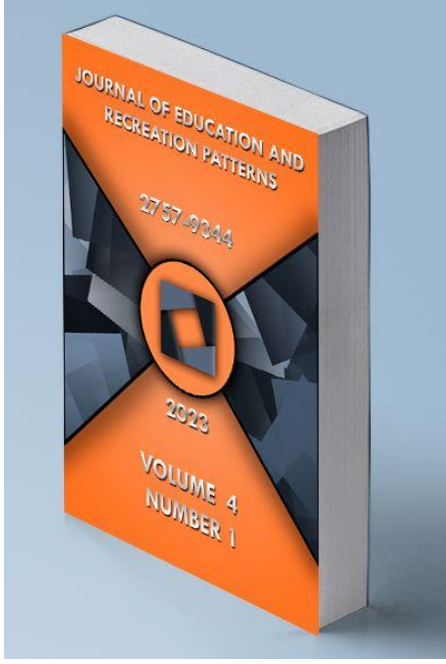
Copyright: © 2023 (Ertürk, R.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

The Effect of Faculty of Sports Sciences Students' Unemployment Concerns on Academic Self-Efficiency

Özlem EKİZOĞLU¹

To cite this article:

Ekizoğlu, Ö. (2023). The Effect of Faculty of Sports Sciences Students' Unemployment Concerns on Academic Self-Efficiency. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 31-45.

DOI: <https://doi.org/10.53016/jerp.v4i1.92>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Özlem EKİZOĞLU, Assistant Professor, Erzincan Binali Yıldırım University, Faculty of Sport Sciences, ozlem.ekizoglu@erzincan.edu.tr, <https://orcid.org/0000-0002-5705-7134>

The Effect of Faculty of Sports Sciences Students' Unemployment Concerns on Academic Self-Efficiency

Özlem EKİZOĞLU¹

ARTICLE INFORMATION

Original Research Paper

Received 10.01. 2022

Accepted 22.03. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 31-45

ABSTRACT

Among the concerns experienced by the youth today, anxiety about the future and unemployment have reached remarkable dimensions. This research was carried out to examine the effect of unemployment anxiety on the academic self-efficacy of the students of the faculty of sports sciences. The unemployment anxiety scale and academic self-efficacy scale were used as data collection tools. The sample group for the study consists of 417 university students studying at the faculties of sports sciences at six universities in Turkey. Data were collected via Google Form, and the SPSS 21 package was used in the analysis of the data obtained. According to the findings, the unemployment anxiety of the students of the faculty of sports sciences; academic achievement differs according to grade point average, coaching certificate, and work experience. Academic self-efficacy levels differ significantly according to gender, department average, and work experience.

As a result, there is a positive and significant relationship between "personal pessimism and lack of confidence", "lack of qualitative knowledge and skills," and "cognitive practices and academic self-efficacy" among the unemployment concerns of sports science students. It was determined that, as the unemployment anxiety of the students increased, their academic self-efficacy scores also increased.

Keywords: Academic Self-Efficacy, Faculty of Sports Science Students, Unemployment Anxiety



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

People need to work and earn money to survive. For this reason, most university students spend time thinking about post-graduation while studying (Surat & Ceran, 2020). With the increasing number of universities, the rate of students entering the university is increasing. Universities, which produce thousands of graduates every year, easily fill the job gap in the market. Young people who want to find a job in the state, public or private sector enter into a great struggle as soon as they graduate from university (Dursun & Aytas, 2009).

Turkey is a country with a dense young population and the problems faced by young people who will enter the labor market are quite high. Employers who offer reasons such as lack of responsibility, lack of work ethic, or demand high expectations do not offer job opportunities to young people (Hobbins, 2016). However, they see young people as low-paid and low-skilled people (McTier & McGregor, 2018). On the other hand, the financial crisis outbreak, the growth of the unemployment rate in every country increases the youth unemployment rate (Grinevica and Rivza, 2018). According to the National Youth Employment Strategy (2021-2023) report of the Ministry of Labor and Social Security: "Youth unemployment rate increased from 17.9% in 2014 to 25.3% in 2020. In 2020, the unemployment rate is 30.3% and the youth unemployment rate is 22.6%. It is observed that the unemployment rate increases as the education level increases. In addition, when the report of the Turkish Statistical Institute (2022) is analyzed by education level; While 8.7% of primary school graduates are unemployed, 11.4% of university graduates are unemployed.

Unemployment is the inability to find a job and the absence of a job. Unemployment can be caused by macro (inadequate education) and micro (personal talent) reasons. The situation that causes university students to experience anxiety about the future in order to have a profession is the increase in youth unemployment rates (Kara, 2022). In the research conducted by Akgün et al. (2019), it is determined that there is a relationship between university students who are aware of the low employment rates and the anxiety of not being able to find a job. Unemployment rates are increasing in direct proportion to the increasing population growth and graduate growth rates (Koçak & Çepni, 2017). Youth unemployment is a category that covers all unemployed youth between the ages of 15-24. Young people are more open to the risk of unemployment and constitute the group most affected by unemployment. An important part of youth unemployment in Turkey is, also educated youth unemployment. Being included in the labor market is of great importance, especially for the social integration of young people. Unemployment brings with it social exclusion and distance from the culture and lifestyle of society. Youth unemployment causes not only social problems but also many economic and psychological problems (Kıcıır, 2017).

Anxiety can be defined as the uneasiness experienced by an individual in the face of a threatening situation (Tekeli, 2017). The biggest anxiety experienced by university students is unemployment and future anxiety (Dursun & Aytas, 2009). Unemployment causes young people to lose their self-confidence, motivation, and skills. The psychological depression experienced by the unemployed; can lead to stigma, unhealthy living, loss of freedom, deprivation of responsibility, and even suicide (Scanlan et al., 2011; İşlek, 2018; Takahashi et al., 2015). Looking at the effects of unemployment on individuals, there is evidence that unemployment is associated with a decrease in psychological well-being. Unemployed people report more psychological distress, depression, and low levels of confidence than their employed counterparts. In this respect, self-efficacy can be viewed as a well-being-enhancing catalyst. Confidence in one's ability to find a job increases well-being, including self-esteem (Creed et al., 2015).

Academic self-confidence is often the undergraduate literature in which students are asked to evaluate their academic abilities. Academic self-efficacy is the expectation of success related to the completion of certain academic tasks (Santiago & Einarson, 1998). It represents the belief in one's capacity to perform a certain academic task (Britner & Pajares, 2006). According to Bandura (1997), academic self-efficacy is the capacity to make plans and realize these plans in order to achieve success in education. In order to develop academic self-efficacy, target setting, information gathering, determination of role models and rewarding methods should be used by giving feedback. The number of studies examining the relationship between self-efficacy and self-handicapping variables is also very limited. In studies conducted with university students, negative correlations have been found between the variables (Arazzini-Stewart & De George-Walker, 2014; Martin & Brawley, 2002). It is possible to say that people with high self-confidence and self-efficacy provide a great output when entering the labor market and during the working process (Durmaz & Ören, 2017).

Investigating college students' self-handicapping is important in many ways. First of all, student success is one of the most fundamental issues for educational institutions and serious efforts and resources are spent to remove the barriers to student success. Self-handicapping, which is one of these barriers, used by students due to its short-term advantages, has many negative effects on students' health, well-being, and performance in the long run (Zuckerman, Kieffer, & Knee, 1998; Zuckerman & Tsai, 2005). Young people, who are aware of the unemployment problem, turn to higher education in order to find a job and provide themselves with a more advantageous position in the labor market. However, raising the education level and the quality of the workforce has not been sufficient to combat unemployment. The figures reveal the increase in educated youth unemployment. The difficulties faced by young people who have completed higher education in entering the labor market, and the intense unemployment experienced also affect young people who continue their university education, causing these young people to worry about being unemployed. The prevalence of unemployment among educated youth leads to an intensification of the tension felt. Anxiety about not being able to find a job and earn money after graduation causes young people to have an academically unsuccessful education period.

In light of the above information; The aim of this study is to reveal the relationship between unemployment anxiety and academic self-efficacy of university students studying at the faculty of sports sciences. In this study, students of the faculty of sports sciences; unemployment anxiety and academic self-efficacy will be compared according to gender, academic grade point average, trainer certificate status, and work experience. In addition, it is thought that revealing the effect of unemployment anxiety on academic self-efficacy will shed light on the causes of the problems experienced by young people and contribute to the literature.

Based on the information provided, answers were sought to the following research questions:

Is there a significant difference between unemployment anxiety of faculty of sports sciences students according to gender, academic achievement grade point average, presence of coaching certificate, and work experience?

- Is there a significant difference between the academic self-efficacy of faculty of sports sciences students according to gender, academic achievement grade point average, presence of coaching certificate, and work experience?

- Is there a significant relationship between gender, academic achievement grade point average, presence of coaching certificate and work experience, unemployment anxiety, and academic self-efficacy of faculty of sports sciences students?
- Is there a significant relationship between unemployment anxiety and academic self-efficacy of faculty of sports sciences students?

METHOD

Research Design

Since this study, which aims to "examine the relationship between academic self-efficacy and unemployment concerns of faculty of sports sciences students", wants to determine whether there is a relationship between academic self-efficacy and unemployment anxiety; The research was carried out according to the relational screening design, one of the quantitative research designs. Simple random sampling method was used. Relational screening model is the research model used to examine the relationship between the variables discussed (Karasar, 2007).

Ethical Considerations

In this study, all the rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified in the second part of the directive, under the title of "Proceedings Contrary to Scientific Research and Publication Ethics" were carried out. Ethics committee approval was obtained with the meeting decision of Nişantaşı University dated 22/08/2022 and numbered 2022/34.

Universe and Sample

The universe of research consists of 73210 students of the Faculty of Sport Sciences at universities in Turkey (Higher Education Information Management System, 2022). In the literature, the sample population is determined as 384 in case the total population is over 100.000 with a margin of error of 5% and a confidence level of 95% (Cohen, L., Manion, L., & Morrison, K. (2002)). In our study, the population size is 417, margin error of 5% with a confidence level of 95%. Number of universe: 73,210 students studying at the relevant faculty of sports sciences student in Turkey were identified (Higher Education Information Management System, 2022). When the sample is calculated, 398 data is considered sufficient for a population of 100 thousand and above (Cohen, L., Manion, L., & Morrison, K. (2002)). The sample size of the study is 417.

Data collection tools and data collection

The questionnaire presented during the data collection process of the research consists of three parts. In the first part of the questionnaire used, there is the "Personal Information Form" used to determine the demographic information of the participants. Gender, academic achievement GPA, presence of coaching certificate, and work experience were asked. The second part of the data collection questionnaire includes the "Academic Self-Efficacy Scale" and the third part includes the "Unemployment Anxiety Psycho-Social Scale". The Google Form link, in which the scales were converted, was delivered to the university staff and distributed to the students and the data were collected online. The data of the research were sent to a faculty member from the faculties of sports sciences of all universities in Turkey in the 2022-2023 fall academic year, the study was explained and the students were asked to send

the online survey link to the students. However, feedback was received from a total of 6 universities, namely Balıkesir University, Trakya University, Istanbul Esenyurt University, Istanbul Gelişim University, Erzincan Binali Yıldırım University and Akdeniz University.

Psycho-Social Scale for Unemployment Anxiety

The “Unemployment Anxiety Scale” developed by Ersoy-Kart and Erdost (2008) was used. The scale consists of 26 questions, a 5-point Likert scale ((5) strongly agree- (1) strongly disagree), and 4 sub-dimensions. Sub dimensions; employment difficulties in the economy, environmental and social pressure, personal pessimism and lack of self-confidence, and qualitatively lack of knowledge and skills. Cronbach Alpha values were calculated as 0.90.

Academic Self-Efficacy Scale

The “Academic Self-Efficacy Scale” developed by Owen and Froman (1988) and adapted into Turkish by Ekici (2012) was used. The scale consists of 33 items and 3 sub-dimensions. The sub-dimensions of the scale are listed as social status, cognitive practices, and technical skills sub-dimensions. The Cronbach Alpha value was found to be 0.86. Cronbach's alpha values for the sub-dimensions: 0.88 in the social status sub-dimension; 0.82 in the cognitive applications sub-dimension and 0.90 in the technical skills sub-dimension.

Analysis of Data

The data collected through the Google form were transferred to the SPSS 21 Statistics program. Mahalanobis and Cook's distance values and extreme values were removed from the data set. Descriptive statistics of the sub-dimensions used in the study (number of people, mean, standard deviation, skewness and kurtosis, kolmogrov- simirnov and Cronbach's Alpha) were examined and distribution normality was examined. Since Kolmogorov-Smirnov $p < 0.05$, the distribution is considered not normal. Since the data did not show normal distribution, the findings were obtained with Mann Whitney U Test, Kruskal Wallis Test and Spearman's Correlation tests with 5% significance level.

Table 1. Distribution Normality Findings

	Unemployment 1	Unemployment 2	Unemployment 3	Unemployment 4	ASE 1	ASE 2	ASE 3
N	417	417	417	417	417	417	417
Mean	3,12	3,12	2,87	2,78	2,62	2,57	2,54
Median	3,33	3,25	3,00	3,00	2,6	2,53	2,5
Skewness	-0,47	-0,32	-0,09	-0,05	0,35	0,26	0,28
Kurtosis	-0,63	-0,84	-0,65	-0,81	-0,112	-0,27	-0,27
Kolmogrov-Smirnov (p)	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Cronbach's Alpha	0,95			0,94			

Unemployment Anxiety Scale

- 1: Employment Challenges in the Economy
- 2: Environmental and Social Pressure
- 3: Personal Pessimism and Lack of Confidence Unemployment
- 4: Lack of Qualitative Knowledge and Skills

ASE: Academic Self-Efficacy

- ASE 1: Social status
- ASE 2: Cognitive Applications
- ASE 3: Technical Skill

FINDINGS

In this part of the research, the analyzes are presented. Frequency and percentages of gender, academic achievement average, presence of coaching certificate, and work experience are given (Table 2). Significant gender differences, academic achievement average, presence of coaching certificate, and work experience according to unemployment anxiety and academic self-efficacy are given (Table 4, Table 5, Table 6, Table 7). The relationship between gender, academic achievement average, presence of coaching certificate and work experience, unemployment anxiety, and academic self-efficacy are given in Table 8. The relationship between unemployment anxiety and the academic self-efficacy of the participants is given in Table 9.

Table 2. Demographic Characteristics of the Participants

		N	%
Gender	Female	168	40,3
	Male	249	59,7
Academic GPA	2.00 and below	30	7,2
	2,01-2,49	73	17,5
	2,50-2,99	183	43,9
	3,00-3,49	113	27,1
	3,50-4,00	18	4,3
Do you have a coaching certificate?	Yes	236	56,6
	No	181	43,4
Do you have work experience?	Yes	304	72,9
	No	113	27,1
Total		417	100

In Table 2, the frequency and percentages of the personal information of the participants are given. Participants mostly; It consists of male (59.7%), academic GPA between 2.50-2.99 (43.9%), having a coaching certificate (56.6%) and work experience (72.9%).

Table 3. Unemployment Anxiety and Academic Self-Efficacy Values of the Participants

	X	Ss
Unemployment Anxiety	3,02	0,88
Academic Self-Efficacy	2,58	0,70

It is seen that the mean unemployment anxiety values of the participants are $3,02 \pm 0,88$ and the mean academic self-efficacy values are $2,58 \pm 0,70$.

Table 4. The Differentiation Status of Unemployment Anxiety and Academic Self-Efficacy Levels According to Gender Variable

Unemployment Anxiety	Gender	N	X	U	Z	p
Contraction in Employment and the Labor Force the Effect of Reduction in Needs	Female	168	210,85	20604,5	-0,26	0,79
	Male	249	207,75			
Environmental and Social Pressure	Female	168	221,13	18877,5	-1,69	0,09
	Male	249	200,81			
Personal Pessimism and Lack of Confidence	Female	168	210,53	20659	0,21	0,83
	Male	249	207,97			

Qualitative Lack of Knowledge and Skills	Female	168	217,65	19462,5	-1,21	0,22
	Male	249	203,16			
Academic Self-Efficacy	Gender	N	X	U	Z	p
Social Status	Female	168	205,95	20403,5	-,42	0,67
	Male	249	211,06			
Cognitive Applications	Female	168	192,96	18222	-2,23	0,02
	Male	249	219,82			
Technical Skill	Female	168	200,53	19492,5	-1,18	0,24
	Male	249	214,72			

According to the Mann Whitney U Test results, there is no significant difference between the sub-dimensions of unemployment anxiety according to the gender of the participants ($p > 0,05$).

From the sub-dimension of the academic self-efficacy scores, there are significant differences between cognitive practices and gender ($u=18222$, $p=0,02 < 0,05$, $z=-2,23$). Cognitive applications scores of male participants are higher than female participants.

Table 5. The Differentiation Status of Unemployment Anxiety and Academic Self-Efficacy Levels According to Academic Grade Point Average

Unemployment Anxiety		N	Mean Rank	X²	df	p
The Effect of Contraction in Employment and Decrease in Labor Need	2,00 and below	30	172,18	12,16	4	0,02
	2,01-2,49	73	174,55			
	2,50-2,99	183	216,45			
	3,00-3,49	113	226,48			
	3,50-4,00	18	224,58			
Environmental and Social Pressure	2,00 and below	30	187,90	11,28	4	0,02
	2,01-2,49	73	172,85			
	2,50-2,99	183	212,76			
	3,00-3,49	113	229,19			
	3,50-4,00	18	225,81			
Personal Pessimism and Lack of Confidence	2,00 and below	30	207,27	8,91	4	0,06
	2,01-2,49	73	173,77			
	2,50-2,99	183	211,91			
	3,00-3,49	113	226,92			
	3,50-4,00	18	212,67			
Qualitative Lack of Knowledge and Skills	2,00 and below	30	214,17	4,96	4	0,29
	2,01-2,49	73	192,96			
	2,50-2,99	183	216,50			
	3,00-3,49	113	213,31			
	3,50-4,00	18	162,14			
Academic Self-Efficacy		N	Mean Rank	X²	df	p
Social Status	2,00 ve altı	30	303,28	29,10	4	0,00
	2,01-2,49	73	232,88			
	2,50-2,99	183	203,88			
	3,00-3,49	113	184,36			
	3,50-4,00	18	161,75			
Cognitive Applications	2,00 ve altı	30	293,77	32,70	4	0,00
	2,01-2,49	73	237,30			
	2,50-2,99	183	207,29			
	3,00-3,49	113	184,69			
	3,50-4,00	18	122,94			
Technical Skill	2,00 ve altı	30	265,73	11,34	4	0,02

2,01-2,49	73	222,64
2,50-2,99	183	207,27
3,00-3,49	113	194,21
3,50-4,00	18	169,58

The participants' academic self-efficacy and unemployment anxiety scores were examined with the Kruskal-Wallis test whether there was a significant difference according to their academic grade point average.

According to the academic achievement grade point averages of the students, from the unemployment anxiety sub-dimensions; There is a significant difference between the shrinkage in employment and the decrease in the need for labor ($\chi^2=12.16$, $df=4$, $p=0.02$) and environmental and social pressure ($\chi^2=11.28$, $df=4$, $p=0.02$) scores ($p<0.05$). The unemployment anxiety of the participants with an academic achievement GPA of 2.00 and below is higher than the others.

According to the academic achievement grade point average of the students, from the sub-dimensions of academic self-efficacy; social status ($\chi^2=29.10$, $df=4$, $p=0.00$), cognitive practices ($\chi^2=32.70$, $df=4$, $p=0.00$) and technical skills ($\chi^2=11.34$, $df=4$, $p=0.02$). Students with a department average of 2.00 and below have higher academic self-efficacy scores than others.

Table 6. The Differentiation Status of Academic Self-Efficacy and Unemployment Anxiety Levels According to the Variable of Coaching Certificate

Unemployment Anxiety		N	X	U	Z	p
Contraction in Employment and the Labor Force the Effect of Reduction in Needs	Yes	236	213,21	20365	-,81	0,41
	No	181	203,51			
Environmental and Social Pressure	Yes	236	232,67	157725	-4,58	0,00
	No	181	178,14			
Personal Pessimism and Lack of Confidence	Yes	236	236,91	14771	-5,41	0,00
	No	181	172,61			
Qualitative Lack of Knowledge and Skills	Yes	236	233,11	15669	-4,68	0,00
	No	181	177,57			
Academic Self-Efficacy		N	X	U	Z	p
Social Status	Yes	236	208,63	21271	-,07	0,94
	No	181	209,48			
Cognitive Applications	Yes	236	218,94	19011,5	-1,92	0,06
	No	181	196,04			
Technical Skill	Yes	236	207,27	20949	-,34	0,74
	No	181	211,26			

According to Mann Whitney U Test results, environmental and social pressure ($u=15772.5$, $p=0.00$, $z=-4.58$), personal pessimism and lack of self-confidence ($u=14771$, $p=0.00$, $z=-5.41$) and lack of qualitative knowledge and skills ($u=15669$, $p=0.00$, $z=-4.68$) differ significantly according to the presence of unemployment anxiety coaching certificate ($p<0.05$). The difference found is in favor of the participants with a coaching certificate.

There is no significant difference between the presence of coaching certificate variable and academic self-efficacy ($p>0.05$).

Table 7. The Differentiation Status of Academic Self-Efficacy and Unemployment Anxiety Levels According to the Work Experience Variable

Unemployment Anxiety		N	X	U	Z	p
Contraction in Employment and the Labor Force the Effect of Reduction in Needs	Yes	304	211,53	16407,0	-0,70	0,48
	No	113	202,19			
Environmental and Social Pressure	Yes	304	206,03	16272,0	-0,83	0,41
	No	113	217,00			
Personal Pessimism and Lack of Confidence	Yes	304	203,19	15409,0	-1,62	0,10
	No	113	224,64			
Lack of Qualitative Knowledge and Skills	Yes	304	198,91	14110,0	-2,81	0,01
	No	113	236,13			
Academic Self-Efficacy		N	X	U	Z	p
Social Status	Yes	304	203,49	15500,0	-1,53	0,12
	No	113	223,83			
Cognitive Applications	Yes	304	202,78	15285,5	-1,73	0,08
	No	113	225,73			
Technical Skill	Yes	304	200,74	14664,0	-2,31	0,02
	No	113	231,23			

According to the Mann Whitney U Test results, the participants' lack of qualitative knowledge and skill sub-dimension, which is one of the unemployment anxiety sub-dimensions, differs significantly according to their work experience (u= 14110.0, p=0.00, z=-2.81). The result is in favor of those without work experience.

Technical skill average scores from the academic self-efficacy sub-dimension differ significantly according to work experience (u=14664.0, p=0.02, z=-2.31). The technical skill scores of the participants without work experience are higher than those with work experience.

Table 8. Relationship Between Dependent Variables and Independent Variables

	Unemployment Anxiety					Academic Self-Efficacy		
	Contraction in Employment and the Labor Force the Effect of Reduction in Needs	Environmental and Social Pressure	Personal Pessimism and Lack of Confidence	Qualitative Lack of Knowledge and Skills	Social Status	Cognitive Applications	Technical Skill	
Gender	r	-0,01	-0,08	-0,01	-0,06	0,02	0,11*	0,06
	p	0,80	0,09	0,83	0,23	0,67	0,03	0,24
	n	417	417	417	417	417	417	417
Academic Grade Point Average	r	0,15**	0,15**	0,11*	0,00	-0,23**	-0,26**	-0,15**
	p	0,00	0,00	0,02	0,96	0,00	0,00	0,00
	n	417	417	417	417	417	417	417
Coaching Certificate	r	-0,04	-0,22**	-0,27**	-0,23**	0,00	-0,09	0,02
	p	0,42	0,00	0,00	0,00	0,94	0,05	0,74
	n	417	417	417	417	417	417	417
Work Experience Status	r	-0,03	0,04	0,08	0,14**	0,08	0,08	0,11*
	p	0,48	0,41	0,11	0,00	0,13	0,08	0,02
	n	417	417	417	417	417	417	417

p*0,05; p**0,01

The relationship between the participants' variables was examined with Spearman's Correlation. There is no significant relationship between gender and unemployment anxiety sub-dimensions ($p>0.05$). There is a weak positive correlation between gender and cognitive practices from the academic self-efficacy sub-dimension ($r=0.11^*$; $p<0.05$). There is a significant relationship between the participants' academic grade point average and unemployment anxiety sub-dimensions ($p<0.05$).

Effect of reduction in employment and labor force and decrease in needs ($r=0.15^*$; $p<0.05$); environmental and social pressure ($r=0.15^*$; $p<0.05$); there is a weak and positive significant relationship between personal pessimism and lack of self-confidence ($r=0.11^*$; $p<0.05$) and academic grade point average. There is no significant relationship between the Lack of Qualitative Knowledge and Skills and the academic grade point average ($p>0.05$).

There is a significant relationship between academic grade point average and academic self-efficacy ($p<0.01$). Social status ($r=-0.23^{**}$; $p<0.01$), cognitive practices ($r=-0.26^{**}$; $p<0.01$) and technical skill ($r=-0.15^{**}$; $p<0.01$) and academic gpa there is a weak and negative significant relationship between them ($p<0.01$). Environmental and social pressure ($r=-0.22^{**}$; $p<0.01$) according to participants' coaching certificate; there is a weak and negative significant relationship between personal pessimism and lack of confidence ($r=-0.27^{**}$; $p<0.01$) and lack of qualitative knowledge and skills ($r=-0.23^{**}$; $p<0.01$) ($p<0.01$). There was no significant difference between academic self-efficacy and the presence of coaching certificate ($p>0.05$). According to the work experience of the participants, there is a weak and positive correlation between unemployment anxiety and lack of qualitative knowledge and skills ($r=0.14^*$; $p<0.01$). There is a weak and positive correlation between technical skill and work experience ($r=0.11^*$; $p<0.05$), which is one of the sub-dimensions of academic self-efficacy.

Table 9. The Relationship Between Academic Self-Efficacy and Unemployment Anxiety

		Academic Self-Efficacy			
		Social Status	Cognitive Applications	Technical Skill	
Unemployment Anxiety	The Effect of Contraction in Employment and Decrease in Labor Need	r	-0,02	-0,00	-0,09
		p	,70	,93	0,08
		n	417	417	417
	Environmental and Social Pressure	r	-0,02	0,02	-0,06
		p	0,75	0,67	0,18
		n	417	417	417
	Personal Pessimism and Lack of Confidence	r	0,08	0,12*	0,05
		p	0,12	0,01	0,31
		n	417	417	417
	Qualitative Lack of Knowledge and Skills	r	0,07	0,16**	0,07
		p	0,14	0,00	0,13
		n	417	417	417

$p^*0,05$; $p^{**}0,01$

When the relationship between unemployment anxiety and academic self-efficacy is examined, there is no significant relationship between social status and technical skills sub-dimensions and unemployment anxiety sub-dimensions ($p>0.05$). However, there is a weakly significant positive correlation between cognitive practices and personal pessimism and lack of self-confidence ($r=0.12^*$; $p<0.05$) and a qualitative lack of knowledge and skills ($r=0.16^{**}$; $p<0.01$). There is no significant relationship between the effect of shrinkage in employment and reduction in labor force and environmental and social pressure.

DISCUSSION AND CONCLUSION

The aim of this study was to examine the effect of unemployment anxiety on academic self-efficacy of university students studying at the faculty of sports sciences.

When Telci et al., (2022) examined the unemployment anxiety of senior undergraduate students, the fact that male students were found to be higher than female students supports our study. In a study of 937 unemployed youth aged 18-27, it was emphasized that young men aged 25-27 are the most vulnerable group (Basic et al., 2009). However, another study was prepared by interviewing 2767 young people and a strong correlation was found between unemployment and general health survey scores. Women had higher rates of psychiatric disorders than men. It has also been found that unemployment increases psychological symptoms (Banks & Jackson, 1982; Wahed & Hassan, 2016). Also, men are more likely to worry about losing their jobs, but women are more likely to feel gloomy (Yalçın, 2022). In Turkey, men have more responsibilities to look after their families and have less parental support than women. It is thought that this situation will create a gender difference in the anxiety of being unemployed.

It can be said that young people who are successful in education are more afraid of their efforts being wasted and being unemployed. Academic achievement also causes differentiation in academic self-efficacy. Surprisingly, university students with academic disabilities have high academic self-efficacy. In addition, students' academic achievement has a positive relationship with unemployment anxiety and a negative relationship with academic self-efficacy. As academic achievement increases, academic self-efficacy decreases. Tayfun and Korkmaz (2016) found no difference in unemployment anxiety among university students compared to the department average.

The students of the faculty of sports sciences are the students who have an active sports life and have the opportunity to work while studying at the university. Opportunities to work are higher than for students of other faculties. Our research findings also support our opinion by showing that more than 50% of the participants have work experience. Qualitative lack of knowledge and skills and academic self-efficacy of technical skills are higher among the students of the faculty of sports sciences who do not have work experience compared to the participants with work experience.

According to the research findings, there is a positive and significant relationship between unemployment anxiety and academic self-efficacy of the students of the faculty of sports sciences. It has been determined that academic cognitive practices increase self-efficacy as students' pessimism and lack of self-confidence and qualitative knowledge and skills increase. The economic problems experienced in the Western world for a long time increase the unemployment rate. Spain, which has a young population (37.7%), has been one of the countries most affected by youth unemployment. In a study conducted in Spain, 542 young unemployed people were employed and it was found that as self-efficacy worsened, psychological distress increased (Merino et al., 2019).

A study was conducted to examine the relationship between the employment status of young unemployed and psychological well-being among Brazilians and Hispanics. A relationship was found between youth unemployment and mental health deterioration in both Spain and Brazil (Luque et al. 2017). In addition, it is determined that academic success increases unemployment anxiety (Telci et al., 2022). According to the results obtained, there is a positive and significant relationship between unemployment anxiety and academic self-efficacy of the students of the faculty of sports sciences. As the unemployment anxiety of the students increases, their academic self-efficacy also increases. In other words, it was concluded

that students' anxiety about being unemployed had a positive effect on their academic self-efficacy.

Results of the research: Cognitive practice scores of female students of faculty of sports sciences participating in the research were found to be higher than males. It is seen that as the unemployment anxiety of the participants increases, the academic grade point average also increases. In addition, as academic self-efficacy scores increase, academic achievement grade averages decrease. Participants with a coaching certificate have higher unemployment anxiety than those without a certificate. Participants without work experience are more likely to lack qualitative knowledge and skills than those with work experience. In addition, the technical skill scores of the participants without work experience are higher than those with work experience. It was determined that as "personal pessimism and lack of self-confidence" and "lack of qualitative knowledge and skills" increased, their academic self-efficacy in cognitive practices increased.

Suggestions

It is necessary to help increase the future motivation of young people by making more studies on youth employment. It is important to develop new and applicable strategies, especially the state and its policies. Private, public, or foundations with employment doors; Sustainable projects and incentive program applications can play a helpful role in preventing unemployment.

Limitations of the Research

3rd and 4th year students from all departments in the faculty of sports sciences were included in the research. 1st and 2nd year students of the faculty of sports sciences were not included in the study.

REFERENCES

- Akgün, A., Gönen, S., & Aydın, M. (2007). An investigation of anxiety levels of elementary science and mathematics teaching students according to some variables. *Electronic Journal of Social Sciences*, 6(20), 283–299.
- Arazzini-Stewart, M., & De George-Walker, L. (2014). Self-handicapping, perfectionism, locus of control and self-efficacy: A path model. *Personality and Individual Differences*, 66, 160-164. doi: 10.1016/j.paid.2014.03.038
- Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. Newyork: Freeman.
- Banks, M. H., & Jackson, P. R. (1982). Unemployment and risk of minor psychiatric disorder in young people: cross-sectional and longitudinal evidence. *Psychological medicine*, 12(4), 789-798.
- Basic, J., Slehan, M. F., & Kranzelic, V. (2009). The most vulnerable groups of unemployed young people in Croatia: preliminary data of the project <Social inclusion and living strategies of unemployed young people in Croatia and Slovenia in the European context> Socijalna uključenost I strategije zivljenja nezaposlenih mladih u Hrvatskoj I Sloveniji u europskom kontekstu. *Studijski Centar Socijalnog Rada. Ljetopis*, 16(1), 111-132.
- Britner, S. L., & Pajares, F. (2006). Sources of science self-efficacy of middle school students. *Journal of Research in Science Teaching*, 43, 485-499.
- Cohen, L., Manion, L., & Morrison, K. (2002). *Research methods in education*. Routledge.

- Creed, P. A., Bloxsome, T. D. & Johnston, K. (2015). Self- esteem and self-efficac yout comes forum employe dindividual attending occupational skill straining programs, <http://www98.griffith.edu.au/dspace/bitstream/handle/10072/4013/1?sequence=1> Accessed on 10/01/2023.
- Çalışma ve Sosyal Güvenlik Bakanlığı (2022). National youth employment strategy 2021-2023 report. <https://www.csgb.gov.tr/media/86869/ulusal-genc-istihdam-stratejisi-ve-eylem-plani-2012-2023.pdf> The address was reached on 06/01/2023.
- Durmaz, Ş., & Ören, K. (2017). A look at the impact of self-efficacy and self-confidence on workforce and employment. *Aksaray University Faculty of Economics and Administrative Sciences Journal*, 9(1).
- Dursun, S., & Aytaç, S. S. (2009). Unemployment anxiety among university students. *Journal of Uludag University Faculty of Economics and Administrative Sciences*, 28(1), 71-84.
- Ekici, G. (2012). Academic self-efficacy scale: turkish adaptation, validity and reliability study. *Hacettepe University Faculty of Education Journal*, 43, 174-185.
- Ersoy-Kart M., & Erdost, H. E., (2008). Unemployment worries among Turkish university students, *Social Behavior and Personality: An International Journal*, 36(2), 275-288.
- Grinevica, L., & Rivza, B. (2018). Economic costs of youth unemployment in the European Union. *Economic Science For Rural Development*, 299.
- Hobbins, J. (2016). Young long-term unemployed and the individualization of responsibility. *Nordic Journal of Working Life Studies*, 6(2), 43-59.
- İşlek, Y. (2018). *Examining the unemployment-related anxieties of sports management department students in terms of their relationship with depression and anxiety levels. (mediterranean region example)*, (Master's thesis), Akdeniz University, Institute of Social Sciences.
- Karasar, N. (2007). *Scientific research method: concepts, principles, techniques*. Nobel yayın dağıtım.
- Kaya, L. (2022). *Examination of the relationship between unemployment anxiety and alienation from school in sports sciences students*, (Master's thesis), Aydın Adnan Menderes University, Institute of Health Sciences.
- Kıçır, B. (2017). A look at unemployment anxiety through educated youth unemployment. *Work and Society*, 3(54), 1369-1396.
- Koçak, O., & Çepni, S. (2017). Evaluation of university students' expectations regarding working life: the example of yalova university students, *Trakya University Faculty of Economics and Administrative Sciences E-Journal*, 6(1), 241-265.
- Luque, A. G., Barros, S. C., & Gondim, S. M. G. (2017). Youth unemployment: a comparative study between Brazil and Spain. *Psicologia E Saber Social*, 6(2), 164-171.
- Martin, K. A., ve Brawley, L. R. (2002). Self-handicapping in physical achievement settings: The contributions of self-esteem and self-efficacy. *Self and Identity*, 1(4), 337-351. doi: 10.1080/15298860290106814
- McTier, A., & McGregor, A. (2018). Influence of work–welfare cycling and labour market segmentation on employment histories of young long-term unemployed. *Work, Employment and Society*, 32(1), 20-37.
- Merino, M. D., Privado, J., & Arnaiz, R. (2019). Is there any relationship between unemployment in young graduates and psychological resources? an empirical research from the conservation of resources theory. *Revista de Psicología del Trabajo y de las Organizaciones*, 35(1), 1-8.
- Santiago, A. M., & Einarson, M. K. (1998). Background characteristics as predictors of academic self-confidence and academic self-efficacy among graduate science and engineering students. *Research in higher education*, 39(2), 163-198.

- Scanlan, J. N., Bundy, A. C., & Matthews, L. R. (2011). Health and meaningfulness of time use for unemployed individuals: associations with involvement in education. *Leisure Studies*, 30(1), 21-31.
- Surat, A., & Ceran, D. (2020). Unemployment anxiety of university students. *ISPEC International Journal of Social Sciences & Humanities*, 4(3), 145-166.
- Takahashi, M., Morita, S., & Ishidu, K. (2015). Stigma and mental health in Japanese unemployed individuals. *Journal of Employment Counseling*, 52(1), 18-28.
- Tekeli, Ş. C. (2017). *Comparison of social appearance anxiety and academic self-efficacy levels of physical education and sports teacher candidates and other teacher candidates* (Master's thesis), Bartın University, Institute of Educational Sciences.
- Telci, E. A., Şekeröz, S., Karagöz, B., Cavlak, U., Tomruk, M. S., Başkurt, F., Alğun, C., Kırmacı, K. Z. İ., Yosmaoğlu, H. B., Razak, Ö. A. Yeldan, İ., Subaşı, F. Çınar, M. A. & Ayhan, Ç. (2022). Examination of unemployment anxiety of senior undergraduate students in physiotherapy and rehabilitation schools. *Turkish Journal of Physiotherapy and Rehabilitation*, 33(1). 16-22.
- Turkish Statistical Institute (TUIK) (2022). <https://data.tuik.gov.tr/Bulten/Index?p=Labour-Force-Statistics-June-2022-45651>, Retrieved from the address on 05/01/2023.
- Wahed, W. Y. A, & Hassan, S. K. (2016). "Prevalence and associated factors of stress, anxiety and depression among medical fayoum university students". *Alexandria Journal of Medicine*, 53, 77-84.
- Yalçın, Y.G. (2022). Unemployment Anxiety and Hopelessness in University Students. *Journal of Education and Recreation Patterns (JERP)*, 3 (2), 130-146. DOI: <https://doi.org/10.53016/jerp.v3i2.67>
- Yükseköğretim Bilgi Yönetim Sistemi, (2022). Number of students by education levels and units of higher education institutions. <https://istatistik.yok.gov.tr/> Retrieved from the address on 26.02.2023.
- Zuckerman, M., & Tsai, F. (2005). Costs of self-handicapping. *Journal of Personality*, 73(2), 411-442. doi: 10.1111/j.1467-6494.2005.00314.x
- Zuckerman, M., Kieffer, S. C., & Knee, C. R. (1998). Consequences of self-handicapping: effects on coping, academic performance, and adjustment. *Journal of Personality and Social Psychology*, 74(6), 1619-1628. doi: 10.1037/0022-3514.74.6.1619

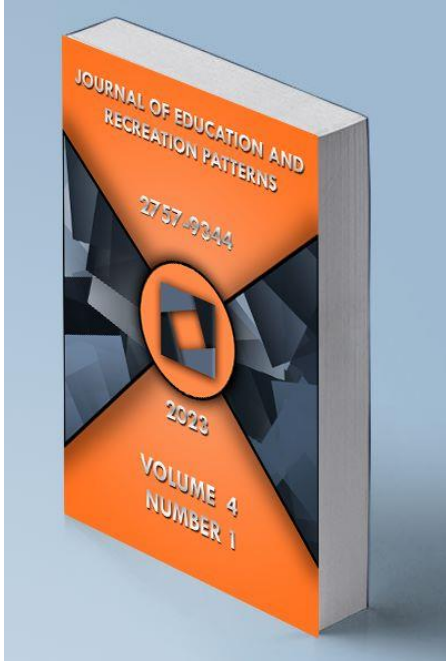
Copyright: © 2023 (Ekizoğlu, Ö.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

Investigation of the Relationship Between Physical Activity Level and Sleep Quality of Secondary School Students

Mustafa Kızılkoca¹, Gürkan Tokgöz²

To cite this article:

Kızılkoca, M. & Tokgöz, G. (2023). Investigation of the Relationship Between Physical Activity Level and Sleep Quality of Secondary School Students. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 46-57.
DOI: <https://doi.org/10.53016/jerp.v4i1.70>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Mustafa Kızılkoca, Munzur University, Faculty of Sport Sciences, mkizilkoca@munzur.edu.tr

¹ <https://orcid.org/0000-0003-3636-6971>

² Gürkan Tokgöz, Munzur University, Faculty of Sport Sciences, tokgozgurkan@hotmail.com

² <https://orcid.org/0000-0002-6043-0278>

Investigation of the Relationship Between Physical Activity Level and Sleep Quality of Secondary School Students**Mustafa Kızılkoca¹, Gürkan Tokgöz²****ARTICLE INFORMATION**

Original Research Paper

Received 09.11. 2022

Accepted 24.03. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1**Pages:** 46-57**ABSTRACT**

This study aims to examine the relationship between physical activity levels and students' sleep quality at the secondary school level. A total of 334 students, 176 female, and 158 male students, studying in Elazığ province participated in the study. The "Physical Activity Scale for Adolescents" and the "Pittsburgh Sleep Quality Index" were used as data collection tools. In the analysis of the data, the independent-sample T-test, one-way ANOVA, and Pearson correlation analysis were used. In the examination of physical activity level and sleep quality in terms of the gender variable, the physical activity level and sleep quality of male students were found to be significantly better than the physical activity level and sleep quality of female students. In the examination of physical activity and sleep quality in terms of the school type variable, it was found that the physical activity levels and sleep quality of Sports High School students were significantly higher than those of Anatolian High School and Science High School students. A medium-level significant relationship was found in examining the relationship between physical activity level and sleep quality scale scores ($r=-0.478$, $p=0.000$). It has been determined that increasing the level of physical activity increases sleep quality. After all; a medium-level significant relationship was found between the physical activity level and sleep quality of the students studying at the secondary education level.

Keywords: Physical Activity, Secondary Education, Sleep Quality, Student

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

The fact that people feel energetic, healthy, and fit when they wake up in the morning shows that they have a quality sleep period and good sleep quality. Sleep quality is examined in two sub-dimensions, quantitative and qualitative. The frequency of waking up, sleep duration, and sleep latency are called the quantitative dimension of sleep quality, while the depth of sleep and the restfulness of sleep are called the qualitative dimension of sleep quality. According to research, it has been determined that between 15% and 35% of people have sleep problems such as maintaining sleep and falling asleep. Low sleep quality and the multiplicity of problems experienced with sleep are accepted as symptoms of important diseases, so increasing sleep quality is very important for human health today (Üstün & Yücel, 2011). As a result of clinical applications and research, sleep quality's importance and value in health are revealed. There are many studies that reveal that the relationship between people's psychological and physical health and sleep quality is linked (Aysan, Karaköse, Zaybak & İsmailoğlu, 2014). Sleep quality is affected by many psychological, physiological, environmental, and social factors. These factors can be grouped under various headings according to gender, whether married, diet, physical activity, lifestyle, social environment, diseases, substance drug, alcohol use, and exercise (Demir, 2011). The quality of sleep and the associated quality of healthy life of people are affected by psychological, physiological, and sociological factors. These factors, which determine wakefulness and sleep rhythm, affect sleep duration and sleep depth, causing sleep to be interrupted at regular intervals and reducing sleep quality (Yi, Shin & Shin, 2006).

There are two different stages of the sleep process, light sleep, and deep sleep. These two phases follow each other from light sleep to deep sleep. Slow-wave sleep, called light sleep, is defined as the sleep phase in which there are no rapid eye movements (NREM), and paradoxical sleep, called deep sleep, is defined as the sleep phase in which there are rapid eye movements (REM). In healthy individuals, the sleep phase begins with NREM and continues with REM. In people who have reached adulthood, the REM phase accounts for 25% of total sleep time. It lasts around 10-40 minutes and repeats every 90-100 minutes (Source and Juniper, 2011). It is known that people who regularly do sports or are physically active during the day have better quality and easier sleep. At the end of a tiring day, the onset of the REM sleep phase is shortened, while the duration of the REM phase is prolonged as the rest period increases. While the physically low level of fatigue facilitates the process of sleeping, the transition to sleep at the end of a stressful and psychologically overly busy day is challenging (Lopes, Robaina, & Rotenberg, 2012).

Physical activity is called physical movements that cause the human body to spend more energy than its normal state with the contraction of muscle groups (Özer, 2006). Physical activity is called physical movements that cause the human body to spend more energy than its normal state with the contraction of muscle groups (Özer, 2006). The basis of the movement system of the human body is to expend the energy received from the outside through food. There is a parallel relationship between spending the energy available in the body and physical movements. If there is a positive difference between the amount of energy taken during the day and the amount of energy spent, it is understood that the person is a physically active individual. In order for this difference to occur, individuals must be in a physically active lifestyle (Hekim, 2014). Today, the fact that people continue their daily lives without moving too much causes an increase in various health problems and this problem increases the importance of physical mobility (İlhan, 2018). Physical activity can serve as a tool to help promote excellence (Kibaek, et al., 2022). Even if the concept of physical activity or physical fitness has similar meanings to the term sport, there are differences in scope between these two terms. While simple movements that are counted in daily life can be included in the scope of physical activity, the fact that the movements applied within the scope of sports are regular, canonical, and aimed at

a special purpose distinguishes these two concepts from each other (Yüksel, Hekim, & Gürkan, 2014). Regular physical activity or training within the framework of a certain branch reveals the need for rest in the human body. For this reason, the need for sleep arises in the body after the activity or training. Sleep replaces the energy consumed in the body after the activity and repairs the damaged tissues (Driver & Taylor, 2000). Sleep problems or sleep disorders have recently increased considerably in individuals at a young age (Yang, et. al., 2003). It has been determined in the research that people who state that they have sleep problems feel physically and mentally bad (Lafçı, 2009). In addition, it has been determined that people with high physical activity levels have high sleep quality and do not have many sleep problems (Aktaş et al., 2015).

This study was conducted to find an answer to a problem arising from the uncertainty of whether the physical activity levels of secondary school students have a relationship with their sleep quality and whether some variables will affect this condition.

In line with the information provided, the aim of the study was determined as the examination of the relationship between the physical activity level and sleep quality of the students studying at the secondary school level.

Hypotheses:

H1. The increase in the physical activity levels of secondary school students positively affects their sleep quality.

H2. Physical activity levels of secondary school students; It differs according to gender, age, grade level, and type of school.

H3. Sleep quality of secondary school students; It differs according to gender, age, grade level, and type of school.

METHOD

Research Model

In this study, in order to determine the relationship between the physical activity level and sleep quality of secondary school students studying in Elazığ city center; relational screening model and descriptive screening model were used. The relational screening model is called the screening approach, which aims to determine the presence of change between two and more variables (Karasar, 2011). Descriptive screening is research conducted on large groups, in which the opinions and attitudes of the individuals in the group about a phenomenon and event are taken, and the facts and events are trying to be described (Karakaya, 2012).

Ethics of Research

This study was conducted by the Firat University Non-Invasive Research Ethics Committee; Based on the application numbered 425459 on 24.09.2022, it was decided by a majority of votes that it conforms to the ethical rules. The subject of the study was explained to the participants and it was stated that the personal data obtained would only be used for scientific study purposes. Participants in the study were informed that they have the right to withdraw from the study if they wish during the study phase.

Study Group

The population of the study consisted of 2570 secondary school students studying in sports high schools (210), science high schools (790), and Anatolian high schools (1570) in

Elazığ city center. To determine the most appropriate sample volume for the research in which the simple random sampling method is used; n is the sample size; N is the volume of the universe; The Cochran Formula was used with t being the table value of the reliability level, p and q being the probabilities of seeing and not seeing the event of interest, respectively, and d being the sensitivity level. (Gürbüz ve Şahin, 2016).

$$\text{Sample size } n = N.(t^2.p.q) / (d^2.(N-1) + (t^2.p.q))$$

According to this formula, the lowest sample lower limit for 2570 students was determined as 332. The sample group consisted of 334 students, including 158 female students and 176 male students in these secondary education institutions. The descriptive statistics of the sample group are given in table 1.

Table 1. Sample Group Descriptive Statistics Table

Variables	Group	n	%
Gender	Male	158	47,3
	Female	176	52,7
Age	14 years	92	27,5
	15 years	99	29,6
	16 years	77	23,1
	17 years	66	19,8
Grade Level	9th grade	92	27,5
	10th grade	99	29,6
	11th grade	77	23,1
	12th grade	66	19,8
School Type	Sports High School	95	28,4
	Anatolian High School	126	37,7
	Science High School	113	33,8

When the table is examined, 158 of the 334 students who participated in the research were female (47.3%) and 176 were male (52.7%). The 14-age group consists of 92 people (27.5%), the 15 age group consists of 99 people (29.6%), the 16 age group consists of 77 people (23.1%), and the 17 age group consists of 66 people (19.8%). The number of 9th-grade participants was 92 (27.5%), the number of 10th-grade participants was 99 (29.6%), the number of 11th-grade participants was 77 (23.1%), and the number of 12th-grade participants was 66 (19.8%). The number of participants in Sports High School was 95 (28.4%), the number of participants in Anatolian High School was 126 (37.7%), and the number of participants in Science High School was 113 (33.8%).

Data Collection Tools

Personal Information Form

Personal information form created by researchers; consists of gender, age, grade level and school type variables.

Pittsburgh Sleep Quality Index

The Pittsburgh sleep quality index, developed by Buysse in 1989, is a self-report scale that evaluates sleep disorders and sleeps quality over the past month. The adaptation, reliability, and validity of the scale to Turkish were made by Ağargün et al. in 1996. Pittsburgh Sleep Quality Index consists of a total of 23 questions and 7 components. 18 of the questions were filled by the participant himself, and 5 questions were asked to be filled in in consultation with their families because the participants were students. Question 19 was not included in the scale

scoring. In the evaluation of the scale, scores from 7 components were calculated: sleep delay, use of sleep medication, sleep duration, sleep disturbance, subjective sleep quality, habitual sleep activity, and daytime dysfunction. Each component was evaluated over 0-3 points and the total Pittsburgh Sleep Quality Index score was calculated. The total score on the scale is 0-21. A score of 5 and below indicates that sleep quality is good, while a score above 5 indicates poor sleep quality.

Physical Activity Scale for Adolescents

The scale of physical activity for adolescents was developed by Kowalski et al. (2004). The study on the adaptation of the scale to Turkish, reliability, and validity was carried out by Sert ve Temel (2013). The scale consists of 9 items. The scale aims to determine the level of physical activity of the participant in the last week. The scale is five points Likert type. The lowest 1 point and the highest 5 points can be obtained from the scale items. As a result of the scale scoring, the lowest 8 and the highest 40 points can be obtained. When the total score approaches 8, it is considered a low activity level, and when it approaches 40, it is considered a high activity level. Question 9 of the scale was not included in the evaluation. It is a question item created to determine whether a situation that interferes with physical activity has occurred. Cronbach's alpha coefficient, which is the Turkish reliability and validity coefficient of the scale, was reported as 82.

Data Analysis

The SPSS 22.0 program was used in the statistical analysis of the data. Skewness and Kurtosis values were examined for normal distribution values of the data. The value range is +1.5, -1.5 is accepted. For this reason, it was deemed appropriate to use parametric tests in statistical analysis. In the comparison of the obtained data, the Dependent-Sample T-test and the One Way Anova tests were applied. Pearson Correlation Analysis was applied to examine the relationship between physical activity level and sleep quality. The significance level was determined as $p < 0.05$ in the study.

Table 2. Skewness and Kurtosis Values of Physical Activity Level and Sleep Quality Data

Measured values	n	X	Sd	Skewness	Sd	Kurtosis	Sd
Level of physical activity	334	19,009	0,229	0,503	0,133	-0,027	0,266
Sleep quality	334	5,323	0,083	0,014	0,133	-0,484	0,266

X: Mean; Sd: Standard deviation

FINDINGS

In this part of the study, the findings as a result of the analysis of the data obtained are mentioned.

Table 3. Comparison of Physical Activity Level and Sleep Quality Values in terms of Gender Variable

Measured values	Gender	n	X	Sd	t	p
Level of physical activity	Female	158	17,582	3,928	-6,223	0,000*
	Male	176	20,289	4,007		
Sleep quality	Female	158	5,829	1,350	6,064	0,000*
	Male	176	4,869	1,523		

* $p < ,05$

Dependent-Sample T test was used to compare physical activity level and sleep quality values in terms of gender variable. When the data were examined, the mean physical activity level of female students was found as $17\pm582\pm3,928$ and the mean physical activity level of male students was $20289,4,007$. In the statistical comparison of the means, a significant difference was found according to the significance level of $p<0.05$ ($p=0.000$). As a result, it was determined that male students had higher physical activity levels than female students. When the average sleep quality values were examined, the average of female students was $5\pm829.1.350$ and the average of male students was $4\pm869.1.523$. In the statistical comparison of sleep quality measurement values of female and male students, a significant difference was found according to $p<0.05$ significance level ($p=0.000$). As a result, it was determined that male students had higher sleep quality than female students.

Table 4. Comparison of Physical Activity Level and Sleep Quality Values in terms of School Type Variable

Measured values	School type	n	X	Sd	F	p
Level of physical activity	Sports High School	95	22,852	3,967	95,944	0,000*
	Anatolian High School	126	18,309	3,158		
	Science High School	113	16,557	2,945		
Sleep quality	Sports High School	95	4,915	1,635	4,942	0,008
	Anatolian High School	126	5,515	1,500		
	Science High School	113	5,451	1,382		

* $p<,05$

One Way Anova test was applied to compare physical activity level and sleep quality values in terms of the school type variable. When the physical activity level measurement averages were examined, the average of Sports High School students was $22\pm852.3.967$, the average of Anatolian High School students was $18\pm309.3.158$, and the average of Science High School students was $16\pm557.2.945$. When the findings were examined, the type of school with the highest physical activity level was determined as Sports High School and the type of school with the lowest physical activity level was determined as Science High School. In the statistical analysis of the data, a significant difference was found between school types according to the level of significance of $p<0.05$ ($F=95,944,p=0,000$). When the average measurement of sleep quality level was examined, the average of Sports High School students was $4,915\pm1,635$, the average of Anatolian High School students was $5,515\pm1,500$, and the average of Science High School students was $5\pm451,1,382$. In the statistical comparison of the mean of sleep quality levels, significant differences were found according to the significance level of $p<0.05$ ($F=4.942, p=0.008$). Tukey test data were examined and tabulated to determine which groups caused the statistical differences between school types in physical activity level and sleep quality level comparisons (Table 5).

Table 5. Examination of Differences Between Types of Schools

Measured values	(I) School type	(J) School type	Mean Difference (I-J)	Sd	p
Level of physical activity	Sports High School	Anatolian High School	4,543	0,454	0,000*
		Science High School	6,295	0,465	0,000*
	Anatolian High School	Sports High School	-4,543	0,454	0,000*
		Science High School	1,752	0,433	0,000*
	Science High School	Sports High School	-6,295	0,465	0,000*
		Anatolian High School	-1,752	0,433	0,000*
Sleep Quality	Sports High School	Anatolian High School	-0,600	0,204	0,010*
		Science High School	-0,535	0,209	0,029*
	Anatolian High School	Sports High School	0,600	0,204	0,010*
		Science High School	0,064	0,194	0,941
	Science High School	Sports High School	0,535	0,209	0,029*
		Anatolian High School	-0,064	0,194	0,941

*p<,05

Tukey test data were examined to determine which school types were the statistical differences detected in the examination of physical activity level and sleep quality index values in terms of the school type variable. As a result of the examination of the data, it was determined that there was a statistical difference in physical activity level values between all groups in the Sports High School, Anatolian High School, and Science High School groups. While there was a difference between Sports High School and Anatolian High School and Science High School in sleep quality index values, no significant difference was detected between Science High School and Anatolian High School.

Table 6. Examination of the relationship between physical activity level and Sleep Quality Index

	Sleep Quality	
Level of physical activity	r	-0,478*
	p	0,000*
	n	334

*p<,05 level of significance

Pearson Correlation Analysis was used to determine the relationship between physical activity level and sleep quality. When the findings were examined, a medium-level negative (r=-0.478) and significant (p=0.000) relationship was found between physical activity level and sleep quality. As a result, as the physical activity level of the students increased, the quality of sleep increased.

DISCUSSION AND CONCLUSION

The research conducted to examine the relationship between the physical activity level and sleep quality of students studying in secondary education institutions was examined within the framework of the literature. In the study, students' physical activity levels and sleep quality levels were examined in terms of gender variable and school-type variables.

In the examination of the physical activity level in terms of gender variable, the mean physical activity level of female students was found to be 17±582.3.928 and the mean physical

activity level of male students was $20 \pm 289.4.007$. A statistically significant difference was found in the comparison of the averages. It was found that male students had higher physical activity levels than female students. In the literature review on the subject, Parlaktaş (2018) found that female students have lower physical activity levels than male students in her research on secondary school students. In their research, Talema and Yang (2000) determined that male students had higher levels of physical activity than female students. Karaaslan and Çelebioğlu (2018) found that in their study investigating the healthy lifestyles of high school students, the mean physical activity scores of female students were lower than male students. Melnyk et al. (2009) determined in their research that young individuals with high body fat percentage values have less physical activity levels and spend less time on physical activity. Ölcücü et al. (2015) stated in their research that the physical activity levels of male students were higher than female students in their research examining the relationship between physical activity levels and depression of secondary school students and that this situation could be because the social roles of female students were more rigid than male students or physical characteristics. The studies found as a result of the literature search show parallels with the research. In the examination of the physical activity level in terms of the school type variable, the mean scale score of Sports High School students was found as 22 ± 3.967 , the average scale score of Anatolian High School students was 18.309 ± 3.158 , and the mean scale score of Science High School students was found as $16 \pm 557.2.945$. When the findings are examined, it is seen that the students of Sports High School have the highest average, the average of the students of Anatolian High School second, and finally the average of the students of Science High School. A statistically significant difference was found between school types. In the literature review on the subject, Adak (2021) found significant differences between school types in the comparison of physical activity levels in terms of school type in his research in which he examined the factors preventing high school student's participation in physical activity. While the physical activity levels of Sports High School students had the highest average, the type of school with the lowest average was determined as Science High School. Doğan(2021) found a significant difference in physical activities in the school-type variable examination and stated that sports high schools had more physical activity levels than other high schools in his research, examining the participation of high school students in recreational activities.

In the examination of the sleep quality index measurement results in terms of gender and school type variable, the mean sleep quality measurement of female students was found as $5 \pm 829 \pm 1,350$ and the average sleep quality measurement of male students was found as $4869,1,523$. It was found that the sleep quality level of male students was significantly better than that of female students when the findings were examined. In terms of the school type variable, the mean of sleep quality measurement was found as $4,915 \pm 1,635$ in Sports High School students, $5,515 \pm 1,500$ in Anatolian High School students, and $5 \pm 451,1,382$ in Science High School students. The average sleep quality values of sports high school students were found to be significantly better than those of Anatolian High School and Science High School students. There was no significant difference between the sleep quality measurement results of Anatolian High School and Science High School students. In the literature review on the subject, Liu et al. (2008) found that female students had more sleep problems than male students in studies investigating the sleep problems of adolescents living in China. Şenol et al. (2012) found that the Pittsburgh Sleep Quality Index average score of female students was 6.64 and the Pittsburgh Sleep Quality Index average score of male students was 6.01 in their studies investigating the factors affecting sleep quality in adolescents. Burgard and Ailshire (2013) explained that females have lower sleep quality than males due to females' social place in society, emotional changes caused by hormonal changes, and their role in the family. Yaman (2020) examined the relationship between exam anxiety and the sleep quality of different types of high school students and found a significant difference between sleep quality and the sleep hours of students studying in different types of schools. In the statistical examination of the

relationship between physical activity level and sleep quality, a significant difference was found ($p=0.000$). It was determined that there was a medium-level relationship when the Pearson correlation coefficient was examined ($r=-0.478$). In this negative relationship, it was found that Pittsburgh Sleep Quality Index scores decreased as physical activity scale scores increased, so the sleep quality of students with high physical activity levels increased. In the literature review on the subject, Wu et al. (2015) found a significant relationship between sleep quality and activity level in their research. Yang et al. (2012) determined that sleep quality increased as the level of exercise increased in young individuals in their research examining the relationship between exercise intensity and sleep quality. ZubiaVeqar (2012) found that low physical activity reduced sleep quality in their studies investigating the effect of physical exercise on sleep. There is a parallel between the literature review and research findings.

After all; A medium-level significant relationship was found between the physical activity level and sleep quality of the students studying at the secondary education level. As the physical activity levels of the students increased, their sleep quality also increased.

As a suggestion, In order to lead a healthy life, the individual needs a well-defined physical activity program. Afterward, it should support this with a quality sleep pattern. In particular children's participation in physical activity in secondary education should be supported and education should be given periodically. Sporting and recreational organizations should be made to encourage students to participate in physical activity. In addition, the use of mass media, which is one of the biggest problems of today, for students should be limited by families. Thanks to these limitations, students' participation in physical activity increases and one of the factors that prevent them from sleeping until late is eliminated. In this way, physical activity and sleep quality are balanced.

Limitations of Research

This research is limited to the students participating in the study in sports high schools, science high schools and Anatolian high schools in Elazığ city center. Research results are limited to data collection tools.

REFERENCES

- Adak, S.v(2021). *Examination of the factors that prevent high school students from participating in academic self-efficacy and physical activities*. Master's Thesis. Necmettin Erbakan University, Institute of Educational Sciences, Department of Physical Education and Sports. Konya.
- Ağargün, M. Y., Kara, H., & Anlar, O. (1996). Validity and reliability of the Pittsburgh sleep quality index. *Turkish Journal of Psychiatry*, 7(2), 107-115.
- Aktaş, H., Şaşmaz, C. T., Kılınçer, A., Mert, E., Gülbol, S., Külekçioğlu, D., ... & Demirtaş, A. (2015). Investigation of factors associated with physical activity level and sleep quality in adults. *Mersin University Journal of Health Sciences*, 8(2), 60-70.
- Aysan, E., Karaköse, S., Zaybak, A., & İsmailoğlu, E. G. (2014). Sleep quality and influencing factors in college students. *Electronic Journal of Dokuz Eylül University Faculty of Nursing*, 7(3), 193-198.
- Buyse, D. J., Reynolds III, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry Research*, 28(2), 193-213.
- Demir Y. (2011). *Sleep and sleep-related practices Basic Concepts and Skills in Health Practices*. (3rd Edition). Nobel Medical Bookstores. Istanbul.

- Doğan, K. (2021). *The tendency of high school students to recreational activities and the factors that prevent their participation in recreational activities (Malatya province example)*. Master's Thesis, İnönü University, Institute of Health Sciences, Malatya.
- Driver, H. S., & Taylor, S. R. (2000). Sleep and exercise. *Sleep Med Rev*, 4, 387-402.
- Gürbüz, S., ve Şahin, F. (2016). *Sosyal Bilimlerde Araştırma Yöntemleri*, Ankara: Seçkin Yayıncılık.
- Hekim, M. (2014). The importance of physical activity in preventing health problems caused by a sedentary lifestyle, which is a global problem, and health problems arising from sedentary lifestyle. II. International Davraz Congress. 29- 31 May 2014, Isparta. 2363-2371.
- İlhan, A. (2018). *Examination of the relationship between social support and physical activity levels of high school students*. Master's Thesis. Batman University, Institute of Social Sciences. Batman.
- Karaaslan, M. M. ve Çelebioğlu, A. (2018). Determination of healthy lifestyle behaviors of high school students. *Journal of Human Sciences*, s.355-1361.
- Karakaya, İ. (2012). *Bilimsel araştırma yöntemleri*. A. Tanrıöğen (Edt.) Bilimsel araştırma yöntemleri. Ankara: Anı.
- Karasar, N. (2011). *Bilimsel Araştırma Yöntemleri*. Ankara: Nobel Yayınları.
- Kibaek, K. I. M., Pickett, A. C., Stokowski, S., & Jinwook, H. A. N. (2022). Promoting Educational Outcomes Through Openness to Diversity: An Exploration of Sport and Physical Activity. *Journal of Education and Recreation Patterns*, 3(2), 60-76. DOI: <https://doi.org/10.53016/jerp.v3i2.52>
- Kowalski, K. C., Crocker, P. R., & Donen, R. M. (2004). The physical activity questionnaire for older children (PAQ-C) and adolescents (PAQ-A) manual. *College of Kinesiology, University of Saskatchewan*, 87(1), 1-38.
- Lafçı, D. (2009). *The effect of music on the sleep quality of cancer patients*. Master's Thesis. Cukurova University, Institute of Health Sciences, Adana.
- Liu, X., Zhao, Z., Jia, C., Buysse, D.J. (2008). Sleep patterns and problems among Chinese adolescents. *Pediatrics*, 121; 1165–73.
- Lopes, C., Robaina, J. R., & Rotenberg, L. (2012). Epidemiology of insomnia: prevalence and risk factors. *In Can't sleep*, 1-21.
- Melnyk, B.M, Jacobson, D., Kelly, S., O'haver, J., Small, L., Mays, M.Z. (2009). İmproving the mental health of hispanic adolescent: A randomized controlled pilot study. *Journal Of School Health*. 9, 575-584. *Nord J Psychiatry*. 62, (47), 25– 29.
- Ölçücü, B., Vatanserver, Ş., Özcan, G., Paktaş, Y., Çelik, A. (2015). The relationship between physical activity level and depression and anxiety in secondary school students. *International Journal of Turkish Educational Sciences*. 58-67.
- Özer, K. (2006). *Physical fitness*. Ankara: Nobel Publishing Distribution.
- Parlaktaş, Y. (2018). *The Relationship Between Physical Activity Level and Academic Achievement in Secondary School 8th Grade Students (The Case of Kırıkkale Province)*. Master's Thesis. Kırıkkale University, Kırıkkale.
- Şenol, V., Soyuer, F., Akça, R.P. ve Argün, M. (2012). Sleep quality and influencing factors in adolescents. *Kocatepe Medical Journal*. 14; 93-102.
- Sert, Z. E., & Temel, A. B. (2014). Adaptation of the physical activity questionnaire for primary school students to Turkish society: a study of validity and reliability. *Dokuz Eylül University Faculty of Nursing Electronic Journal*, 7(2), 109-114.
- Telama, RISTO ve Yang, X. (2000). Decline in physical activity from youth to young adulthood in Finland. *Medicine and Science in Sports and Exercise*, 1617-1622.
- Üstün, Y., & Yücel, S. Ç. (2011). Examination of sleep quality of nurses. *Maltepe University Journal of Nursing Science and Art*, 1(4), 29-38.

- Wu, X., Tao, S., Zhang, Y., Zhang, S., & Tao, F. (2015). Low physical activity and high screen time can increase the risks of mental health problems and poor sleep quality among Chinese college students. *PloS one*, 10(3), e0119607.
- Yaman, N. (2020). *The relationship between exam anxiety and sleep quality of high school seniors of different types of high school*. Master's Thesis. Biruni University, Institute of Graduate Education, Department of Guidance and Psychological Counseling, Istanbul.
- Yang, C. M., Wu, C. H., Hsieh, M. H., Liu, M. H., & Lu, F. H. (2003). Coping with sleep disturbances among young adults: a survey of first-year college students in Taiwan. *Behavioral medicine*, 29(3), 133-138.
- Yang, P. Y., Ho, K. H., Chen, H. C., & Chien, M. Y. (2012). Exercise training improves sleep quality in middle-aged and older adults with sleep problems: a systematic review. *Journal of physiotherapy*, 58(3), 157-163.
- Yi, H., Shin, K., & Shin, C. (2006). Development of the sleep quality scale. *Journal of Sleep Research*, 15(3), 309-316.
- Yüksel, Y., Hekim, M., Gürkan, O. (2014). Examination of Healthy Life Behavior Patterns of Secondary School Students According to Participation in Physical Activity and Some Variables. III. Educational Research Congress in Sakarya. 12 June 2014, Sakarya University, Turkey. 12, 326-333.
- ZubiaVeagar, M. E. (2012). Sleep quality improvement and exercise: A Review. *International Journal of Scientific and Research Publications*, 2(8), 1-8.

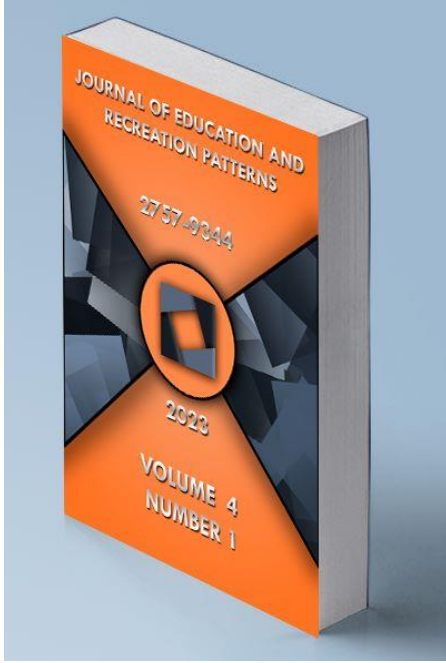
Copyright: © 2023 (Kızılkoca, M. & Tokgöz, G.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

The Role of Participation in Sports and Physical Activity in The Effects of Negative Emotions and COVID-19 on Quality of Life

Gökhan ÇAKIR¹

To cite this article:

Çakır, G. (2023). The Role of Participation in Sports and Physical Activity in The Effects of Negative Emotions and COVID-19 on Quality of Life. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 58-74. DOI: <https://doi.org/10.53016/jerp.v4i1.111>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Gökhan ÇAKIR, Assistant Professor, Recep Tayyip Erdogan University, Faculty of Sport Sciences, gokhan.cakir@erdogan.edu.tr, <https://orcid.org/0000-0002-6800-9816>

The Role of Participation in Sports and Physical Activity in The Effects of Negative Emotions and COVID-19 on Quality of Life

Gökhan ÇAKIR¹

ARTICLE INFORMATION

Original Research Paper

Received 14.03. 2023

Accepted 16.04. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 58-74

ABSTRACT

The purpose of this research is to examine the effect of sports participation and physical activity on negative emotions and the quality of life of COVID-19. Data were collected through the personal information form, the International Physical Activity Questionnaire-Short Form, the COV19-Impact on Quality of Life scale, and Positive-Negative Affect Schedule (PANAS). Data were collected through stratified sampling from Recep Tayyip Erdogan University and Kırşehir Ahi Evran University. The sample of the study consisted of 888 students. The obtained data were analyzed using SPSS 26.0. Necessary assumptions were ensured before the analysis. Afterwards, descriptive statistics and MANOVA were used in the research. It has seen that the number of students who do not do sports under license, who passively participate in sports 2-3 times a week, and whose physical activity level is moderate are more in number. The findings show that students who do sports under license, passively participate in sports, and are physically active experienced lower levels of negative emotions and COVID-19 affected their quality of life at lower levels. As a result, it can be said that participation in sports and physical activity have an impact on negative emotions and the quality of life of COVID-19 in the sample of university students.

Keywords: Negative Emotions, Participation in Sports, Physical Activity, Quality of Life



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

Mental disorders are an important problem among university students (Auerbach et al., 2016). Studies show that university students suffer from negative mood states such as depression, anxiety and stress (Beiter et al., 2015; Eisenberg et al., 2007). The prevalence and adverse effects of anxiety and depression represent the importance of establishing prevention strategies and methods to intervene with these mental disorders (Zhang et al., 2021). At this point, the importance of emotions emerges as they have social and individual value. Although emotions are short lasting, they may have perpetual effects on us. Positive emotions stimulate the formation of new ideas and actions. According to the extension and construction theory, positive emotions expand our ways of thinking and action, and build our personal resources. This way, we can improve our health and well-being in the long run (Fredrikson, 2002).

Emotions can be categorized as positive and negative. Positive emotions include those such as happiness, optimism and success, while negative emotions include the ones such as depression, anxiety and stress (Yilmaz et al., 2017). The negative emotions of individuals can have a negative impact on their quality of life. On the contrary, positive changes in lifestyle are likely to increase the quality of life. Quality of life can be considered as an umbrella that covers life and life-enhancing factors. The components of quality of life are a better environment, the will and ability to live, utility and evaluation. The increase in the quality of these components improves the quality of life as well (Veenhoven, 2013). Holmes and Dickerson (2003) discussed the factors that contribute to the general life quality of individuals under 8 titles and stated that the emotional states and physical activity levels of individuals have an effect on their general quality of life. Moreover Pennington (2021) setting goals that are specific, measurable, attainable, realistic, and time-bound can increase self-efficacy and lead to better decision-making and continued exercise during the maintenance stage of change.

It is a matter of debate that with the spread of the coronavirus, some problems may occur in the basic quality of life of individuals related to their mental health. Although gradually decreasing today, it is difficult to say that the effects of COVID-19 have completely melted away. Different mutations of COVID-19 may cause an increase in the number of cases recently. It is possible to say that this case affects the duration or quality of physical activity negatively and causes people to lead a more sedentary life than before (Wilke et al., 2021; Yeo, 2020). In other words, it can be said that this ongoing state of inactivity, which started with the COVID-19 pandemic, negatively affects the quality of life of individuals physically, emotionally, mentally and socially (Mutz & Gerke, 2021; Ratten, 2020).

As a matter of fact, it was reported in a study that a family member was infected with COVID-19 and it triggered his depression and negatively affected his quality of life (Ma et al., 2020). Similarly, a study conducted with nurses, who fought against COVID-19 at the forefront, showed that the ones caring for COVID-19 patients had high depression scores and low scores of life quality (An et al., 2020). The concept of 'quality of life' is discussed within the scope of the impact of COVID-19, which includes the basic quality of life related to mental health. In addition, it is thought that the negative emotion levels of students and the effect of COVID-19 on their quality of life may be related. Negative emotions and the resultant effect of COVID-19 on quality of life were discussed as dependent variables in this study. In other words, it is proposed that negative emotions and the basic quality of life regard to mental health were related.

Based on these perspectives, the question *"What kind of a role do sports participation and physical activity play on negative emotions and the impact of COVID-19 on quality of life?"* sheds light on this research. Participating regular physical activity habits can develop individuals' physical and mental health positively. Participation in sports is discussed in two forms in this study: Active and inactive participation. While active participation in sports means

whether an individual does sports under license or not, inactive participation deals with the extent to which the individuals do activities such as watching sports competitions on television or social media, reading and following sports news, and talking to others about sports (Lera-Lopez et al., 2021).

Physical activity has positive effects on negative emotions. Physical activity increases the quality of life as well (Nelson et al., 2007). Sports can be considered as a social phenomenon that appeals both to the soul and the body (Balcioglu, 2003). It is claimed in this study that being physically more active and participating in sports enables university students to be less affected by the negative emotions, and thus, the impact of COVID-19 on their quality of life may be lower. Moreover, it is thought that physical activity and participating in sports can partially reduce the negative effects of a sedentary life on individuals. Therefore, it is important to emphasize the role of physical activity and participation in sports in determining the negative emotion levels of students, determining the effect of COVID-19 on their quality of life, and the relationship between these two concepts. As far as known, no studies have been conducted before using these research models with the sample of university students. In addition, it has been found that university students have higher levels of negative emotions such as anxiety, depression and stress compared to the general population (Beiter et al., 2015; Bidwal et al., 2015; Shamsuddin et al., 2013., Zhang, 2021). This may make the results more meaningful.

The purpose of this research is to examine the role of different levels of physical activity and active and inactive participation in sports on the negative emotions and quality of life of university students these days, when the effects of the coronavirus still exist.

Literature Review and Hypotheses

Depression is a serious mental disorder that impairs the health and quality of life of individuals and is also a burden to their families and society (Ferrari et al., 2013). Depression, one of the negative emotions, is associated with low quality of life (Brown et al., 2010). Stress, another negative emotion, has a negative impact on the quality of life because higher stress level appears to be associated with a poorer quality of life (Alkatheri et al., 2020). Gorczynski and her colleagues (2017) emphasized that the levels of stress and depression in university students should be paid attention to and stated that the role of negative emotions is important in providing students with a better quality of life.

It is stated that participation in aerobic exercise programs predicts an increase in quality of life over time in healthy adolescents (Gonipath et al., 2012) and adolescents with asthma (Flapper et al., 2008; Moreira et al., 2008; Sundell et al., 2011). Wanden-Berghe et al. (2015) found a negative relationship between sedentary lifestyle and quality of life. There are studies that examine the relationship between physical activity and quality of life in a sample of university students from different cultures. In a study conducted with Spanish university students, it was reported that individuals who did not meet the physical activity recommendations of WHO underwent worse psychological pain (San Román-Mata et al., 2020).

In their study, investigating the relationships between current exercise participation and quality of life of university students in Taiwan, Chang et al. (2016) found that those who exercise regularly (at least 1 day/week or 2.5 hours/week) have better quality of life. In a study conducted on Italian university students, it was stated that high physical activity level increased the quality of life of both male and female students (Massidda et al., 2015). In another study on medical school students in the Philippines, high levels of depression, stress and burnout in students aged 19-24 were associated with the scores of students with lower quality of life (Domantay, 2014).

Based on the findings on the relationship between physical activity and quality of life, it can be claimed that the effect of COVID-19 on quality of life may be lower in individuals who have high levels of physical activity. In line with all these theoretical and factual studies; it is predicted that the resultant scores of negative emotions and quality of life may differ in accordance with physical activity levels. Accordingly, the following hypothesis was developed: **H1:** The resultant of negative emotion of students with different physical activity levels and the impact of COVID-19 on the quality of life differ.

In a study conducted on a sample of Northeast Mexican university students, it has been determined that participation in sports has a positive effect on the quality of life. In other words, as participation in sports increases, so does the quality of life (Hidalgo-Rasmussen et al., 2013). Therefore, it can be said that participation in sports can reduce the effects of COVID-19 on quality of life.

It was concluded that participation in sports positively supports the medical conditions of children and adolescents while there is insufficient evidence about the psychological and social consequences of sports participation for older adults (Kim et al., 2020). In an experimental study conducted by Cai et al. (2021) a 2-month sports therapy program was applied to individuals aged 20-30 with moderate or higher levels of anxiety, depression and stress disorder. After the sports therapy, it was observed that the anxiety and depression levels of the participants decreased to lower levels, and the stress levels came down to moderate levels. Also, meta-analysis study results show that exercise provides convincing evidence for negative emotion states such as depression, insomnia and anxiety disorders (Wolf et al., 2020).

There is evidence in the literature that students who participate in sports inactively are happier than their peers who do not participate in sports in anyway (Cakir, 2022). Although not directly with negative emotions, the absolute relationship between participation in sports and positive emotions shed light on our study. All these findings indicate that negative emotions and the effects of COVID-19 on quality of life may vary depending on participation cases and levels in sports. Accordingly, the following hypotheses were developed: **H2:** Depending on active participation in sports, the resultant of negative emotion of students and the impact of COVID-19 on their quality of life differs. **H3:** According to the level of inactive participation in sports, the resultant of negative emotion and the impact of COVID-19 on the quality of life differs.

METHOD

Research Method

The descriptive-relational survey model, one of the quantitative research methods, was used in the research. In this model, a case or event is described as it is, and the relationship, effect and degrees of the variables that cause this are determined (İslamoğlu & Alnıaçık, 2019). Two different models were designed and tested in order to determine whether participation in sports and physical activity have a regulatory role in the relationship between negative emotions and quality of life of university students. One of the main assumptions of this analysis is that the independent variables should have independence from the observations, that is, there should be different participants in each group and no participant should be in more than one group. In this context, based on the idea that students with a high level of physical activity can actively participate in sports (doing sports under license), two different models were formed and data were collected from two different samples (Kırşehir Ahi Evran University for Model-1 and RTUE for Model-2).

Model-1

In this research model, the conceptual model in Figure 1 was developed in order to determine the effect of different physical activity levels on negative emotions and quality of life. In other words, this model was formed to evaluate the effect of physical activity, which is the independent variable, on the dependent variables-negative emotions and quality of life.

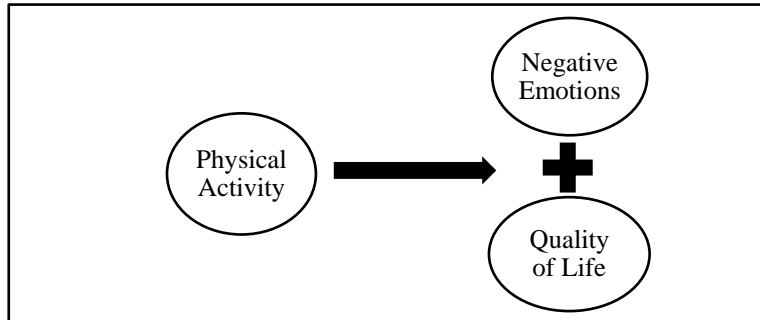


Figure 1: Model-1

The conditional effect means that negative emotions and quality of life will differ depending on low, moderate, or high levels of physical activity (H_1). This regulatory hypothesis, when interpreted within the framework of the research, signifies that the effects of negative emotions and COVID-19 on the quality of life will be lower for students with high physical activity levels.

Model-2

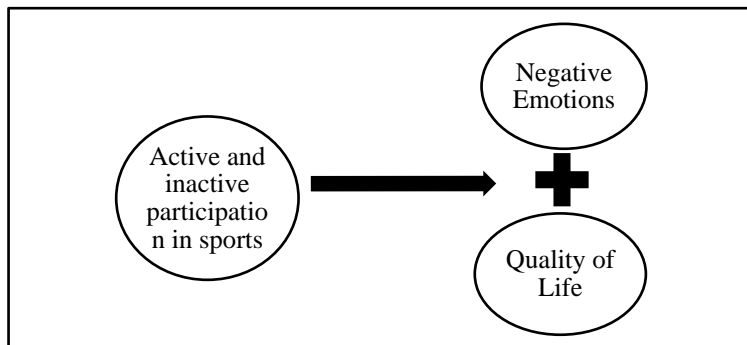


Figure 2: Model-2

The conditional effect here means that negative emotions and quality of life will differ depending on active (H_2) and inactive participation (H_3) in sports. This regulatory hypothesis, when interpreted within the framework of the research, signifies that the effects of negative emotions and COVID-19 on the quality of life will be lower for students who do sports under license and for those who inactively participate in sports at high levels.

Participants and Procedure

As well as the demographic information of the students, the questions used in all scales related to physical activity, negative emotions, and the effects of COVID-19 on quality of life were transferred to the web-based Google forms. Participation was voluntary and all students were informed accordingly. Also, the participants were briefed about the purpose of the research. The forms were arranged in such a way that surveys could not be submitted with missing data.

Stratified sampling method was used in this study (Table 1). In stratified sampling, in practice, the universe is divided into homogeneous layers within itself. Samples are selected from the layers. Elections are combined. Stratified sampling is used in cases where substrates or groups of subunits exist in a universe whose boundaries have been determined (Kılıç, 2013). Student groups were divided into two different strata as undergraduate and associate degree and data were collected according to this division. The population-sample table was used to determine the required sample size. According to the table, if the number of individuals in the population is 20,000, it is stated that at least 377 participants are needed for the sample representation at the 95% confidence level and the 5% confidence interval (Cohen et al., 2018).

Data were collected from 951 students. The data obtained from 16 students (1.6%), who had filled in the questionnaire incorrectly, were excluded from the analysis. Since it is known that the MANOVA tests fail owing to extreme values, 5% trimmed value values in the descriptives table were checked to determine the extreme values, and in this context, 47 data (5.0%) were excluded from the analysis. Thus, the data of 888 university students were evaluated within the scope of the analysis. 517 female and 371 male students consisted the total participant number of 888 (\bar{x} =20.93, SS =3.31). Student distributions vary according to two different models: It was observed that, out of 508 students (\bar{x} =21.17, SD =3.13) in the Kırşehir Ahi Evran University sample for Model-1, 38 (7.5%) had low, 284 (55.9%) had moderate, and 186 had (36.6%) high physical activity levels.

For Model-2, when 380 students (\bar{x} =20.62, SD =3.53) in the RTEU sample were examined in terms of active participation in sports, it was seen that 100 of the students (26.3%) were athletes while 280 of them (73.7%) did not do sports under license. In the inactive participation group on the other hand, it was observed that 99 of the students (26.1%) did not participate at all, 172 (45.3%) did 2-3 times a week, and 109 of them (28.6%) participated almost every day.

A survey form, prepared by using a personal information form and a serious leisure scale-short form, was used to obtain the research data. Participants filled out the survey forms in the recreation areas where they play basketball. Data were collected between June and October 2022.

Ethics committee permission was obtained for the study with the decision number 2022/256 from the Non-Invasive Clinical Research Ethics Committee on 25.11.2022. During the current research, it was acted within the framework of "Higher Education Institutions Scientific Research and Publication Ethics Directive".

Table 1. Strata Weight Ratios and Sample Numbers

	Stratum	Total Number of Students	Strata Weight Ratio	Required sample number according to strata weight ratio	Number of samples in the study
RTEU	Associate Degree	5.230	0.319	120	124
	Undergraduate	11.163	0.681	257	256
	Total number of population/sample	16.393		377	380
Kirsehir Ahi Evran University	Associate Degree	7.119	0.367	138	152
	Undergraduate	12.270	0.633	239	356
	Total number of population/sample	19.389		377	508

Data Collection Tools

Personal Information Form

In order to evaluate active participation in sports, participants were classified according to whether they do sports under license or not. Inactive participation in sports, on the other hand, included the extent to which the individuals do activities such as watching sports competitions on television or social media, reading and following sports news, and talking to others about sports within the last week. In addition, the form included questions about the gender and age.

The Scale of the Impact of COVID-19 on Quality of Life

Sümen and Adibelli (2021) adapted the scale into Turkish which was developed by Repišti et al (2020). The scale consists of 6 items and includes the basic areas of life quality related to mental health. The emotions and thoughts of the individuals in the last seven days were evaluated through the five-point likert scale. Scores were calculated by dividing the total score by the number of items. Higher scores obtained from the scale meant that the individuals with those scores were affected by the epidemic more than the others. The Cronbach's alpha coefficient of the scale was found to be 0.856 for the diagnosed sample, 0.905 for the undiagnosed sample, and 0.910 for the data obtained from the general population (Sümen and Adibelli, 2021). The values were determined as .83 for Model-1 and .78 for Model-2 in this research.

Positive-Negative Affect Schedule (PANAS)

The Positive-Negative Emotion Scale, developed by Watson et al., (1988), consists of two subscales of 10 items each. The 5-point likert type subscales evaluate the positive and negative emotions. The scale was adapted into Turkish by by Gençöz (2000). The 10-item negative emotions subscale was used in this study. The internal consistency coefficient for the negative emotion sub-dimension was found to be .86. The values were determined as .83 for Model-1 and .88 for Model-2 in this research.

International Physical Activity Questionnaire-Short Form (IPAQ-SF)

The questionnaire, which includes information about the time spent physically in the last 7 days, consists of 7 questions in total. The questions are about the time intervals that individuals spend on sitting, walking, moderate and high intensity activities. Standard MET values are calculated for these activities. These values vary according to the intensity of the activity; sitting equals 1.5 METs, walking equals 3.3 METs, moderate-intensity physical activity equals 4 METs, and high intensity physical activity equals 8 METs. Therefore, it is possible to categorize the physical activity levels of individuals according to the values obtained. After calculating the MET value, the physical activity levels of the individuals can be categorized as inactive (<600 MET), minimally active (600 MET-3000 MET) and sufficiently active (>3000 MET) (Öztürk, 2005).

Data Analysis

The data obtained were analysed through the SPSS 26.0 statistics program. MANOVA test was used to examine whether the independent variables in two different models were effective on the dependent variables.

MANOVA is very sensitive to assumptions about the data, thus, the researchers should perform assumptions to make sure the data conforms to the statistic to be calculated (Cohen et al., 2018). Before the analysis process, all the controls such as sufficient sample size (at least 20 people in each group), independence of the groups, normal distribution, linear relationship between dependent variables, absence of multicollinearity, and homogeneity of variances were conducted and it was seen that all assumptions were met. In other words, in order to meet the assumptions required for the preliminary analysis, box m test results, skewness and kurtosis values, Levene test results, correlation values between dependent variables were examined and no violations were observed. In addition to the MANOVA test, descriptive statistics were used to reflect the average score of 888 university students. Also, the second level Tukey HSD test was applied to reveal which groups were significantly different. Data were tested at the $p= 0.05$ significance level.

Ethical Considerations

In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions stated under the title "Actions Against Scientific Research and Publication Ethics", which is the second part of the directive, were not taken. The ethics committee approval required for the study was obtained from the Social and Humanitarian Ethics Committee of Recep Tayyip Erdogan University (dated 25.01.2023 and numbered 2023/034).

FINDINGS

Descriptive Statistics

Descriptive statistics of means and standard deviations for each of the groups were reported in Tables 2 and 3 below. Table 2 shows students' scores for active participation in sports, Table 3 for inactive participation, and Table 4 shows the scores of negative emotions and the impact of COVID-19 on quality of life by physical activity level.

Table 2. Negative Emotion and Quality of Life Score Averages with regards to Active Participation in Sports

Variables	Do you do sports under licence?	n	Mean	SD
Negative Emotions	Yes	100	19,85	7,47
	No	280	23,73	8,91
	Total	380	22,71	8,72
Quality of life	Yes	100	2,40	0,91
	No	280	2,73	0,86
	Total	380	2,64	0,88

When Table 2 is examined, it is seen that the average of negative emotion scores of the students who do sports under license are at a lower level. Similarly, the impact of COVID-19 on the quality of life of the students who do sports under license is lower.

Table 3. Negative Emotion and Quality of Life Score Averages with regards to Inactive Participation in Sports

Variables	To what extent did you do activities such as watching sports competitions on television or social media, reading, and following sports news, and talking to others about sports?	n	Mean	SD
Negative emotions	Never	99	24,77	9,24
	2-3 times a week	172	22,70	8,35
	Almost everyday	109	20,86	8,46
	Total	380	22,71	8,72
Quality of life	Never	99	2,83	0,92
	2-3 times a week	172	2,65	0,87
	Almost everyday	109	2,48	0,85
	Total	380	2,64	0,88

When Table 3 is examined, it is seen that the negative emotion score averages of the students who inactively participate in sports almost every day are at a lower level. Similarly, the impact of COVID-19 on the quality of life of the students, who inactively participate in sports almost every day, is lower.

Table 4. Negative Emotion and Quality of Life Score Averages with regards to Physical Activity Levels

Variables	Physical Activity Levels	n	Mean	SD
Negative emotions	Low	38	27,31	9,38
	Moderate	284	23,23	7,20
	High	186	21,66	7,21
	Total	508	22,96	7,51
Quality of life	Low	38	2,83	1,16
	Moderate	284	2,56	0,95
	High	186	2,37	0,84
	Total	508	2,51	0,94

When Table 4 is examined, it is seen that students who do high levels of physical activity have a lower level of negative emotion score averages. Similarly, the impact of COVID-19 on the quality of life of those students is lower.

Hypothesis Tests

Hypothesis 1

MANOVA test was applied to evaluate the effect of physical activity on the resultant of negative emotion and COVID-19 on quality of life (H_1), and $p=0.05$ significance level was determined. Analysis results are given in Table 5.

Table 5. MANOVA Results of Negative Emotion and the Effect of COVID-19 on Quality of Life by Physical Activity Levels

Wilks' Lambda	F	Hypothesis Df	Fault Df	P	η^2
0,952	6,217	4	1008	0,000	.024

MANOVA test results on negative emotion and the effect of COVID-19 on quality of life reveal that the resultant score levels of students differ significantly depending on their physical activity levels (WilksL(λ)=,952; F(4,1008)=6,217; p<0,05; η^2 =.024). This finding indicates that the scores obtained from the linear component vary depending on the physical activity levels.

Table 6. MANOVA Test Intergroup Effect Results

Source	Dependent Variable	Sum of Squares	df	Mean of squares	F	Sig.	η^2
Validated Model	Negative emotions	1054,234	2	527,11	9,65	0,000	0,037
	Quality of life	8,406	2	4,20	4,81	0,008	0,019
Resultant	Negative emotions	148126,068	1	148126,06	2713,69	0,000	0,843
	Quality of life	1713,988	1	1713,98	1963,23	0,000	0,795
Physical Activity	Negative emotions	1054,234	2	527,11	9,65	0,000	0,037
	Quality of life	8,406	2	4,20	4,81	0,008	0,019

When the results obtained for the dependent variables were evaluated using the Bonferroni-adjusted alpha level of 0.025, it was seen that there were significant differences in students' scores of negative emotions (F(2,505) =9,65, p=0,000; η^2 =.037) and the effect of COVID-19 on quality of life (F(2,505) =4,81, p=0,008; η^2 =.019) depending on their physical activity levels. The results are given in Table 6.

According to the Tukey HSD test results conducted in all groups with significant differences, the negative emotions of the students who do high level of physical activity (\bar{x} =21.66±0.54) are significantly lower compared to the students who do physical activity at somehow lower levels (\bar{x} =27.31±1.19). Similarly, the level of impact of COVID-19 on quality of life of students who do high levels of physical activity (\bar{x} =2.37±0.06) was significantly lower than those who do lower levels of physical activity (\bar{x} =2.83±0.15) (table 4).

Hypothesis 2

MANOVA test was applied to evaluate the effect of active participation in sports on the resultant of negative emotion and COVID-19 on quality of life (**H₂**), and p=0.05 significance level was determined. Analysis results are given in Table 7.

Table 7. MANOVA Results of Negative Emotion and the Effect of COVID-19 on Quality of Life by Active Participation in Sports

Wilks' Lambda	F	Hypothesis Df	Fault Df	P	η^2
0,952	9,474	2	377	0,000	.048

MANOVA test results on negative emotion and the effect of COVID-19 on quality of life reveal that the resultant score levels of students differ significantly depending on their active participation in sports (WilksL(λ)=,952; F(2,377)=9,474; p<0,05; η^2 =.048). This finding indicates that the scores obtained from the linear component vary depending on active participation in sports.

Table 8. MANOVA Test Intergroup Effect Results

Source	Dependent Variable	Sum of Squares	df	Mean	F	Sig.	η^2
Validated Model	Negative emotions	1114,587	1	1114,587	15,190	0,000	0,039
	Quality of life	8,452	1	8,452	10,981	0,001	0,028
Resultant	Negative emotions	140001,903	1	140001,903	1907,966	0,000	0,835
	Quality of life	1945,716	1	1945,716	2527,735	0,000	0,870
Active Participation in Sports	Negative emotions	1114,587	1	1114,587	15,190	0,000	0,039
	Quality of life	8,452	1	8,452	10,981	0,001	0,028

When the results obtained for the dependent variables were evaluated using the Bonferroni-adjusted alpha level of 0.025, it was seen that there were significant differences in students' scores of negative emotions ($F_{(1,378)} = 15,190$, $p = 0,000$; $\eta^2 = .039$) and the effect of COVID-19 on quality of life ($F_{(1,378)} = 10,981$, $p = 0,001$; $\eta^2 = .028$) depending on active participation in sports. The results are given in Table 8. When the averages are examined, it was observed that the levels of negative emotion ($\bar{x} = 19.85 \pm 0.85$) and the effect of COVID-19 on quality of life ($\bar{x} = 2.40 \pm 0.08$) of students who do sports under license are significantly lower than of those who do not do sports under license (table 2).

Hypothesis 3

MANOVA test was applied to evaluate the effect of inactive participation in sports on the resultant of negative emotion and COVID-19 on quality of life (H_3), and $p = 0.05$ significance level was determined. Analysis results are given in Table 9.

Table 9. MANOVA Results of Negative Emotion and the Effect of COVID-19 on Quality of Life by Inactive Participation in Sports

Wilks' Lambda	F	Hypothesis Df	Fault Df	P	η^2
0,965	3,363	4	752	0,010	.018

MANOVA test results on negative emotion and the effect of COVID-19 on quality of life reveal that the resultant score levels of students differ significantly depending on their inactive participation in sports (WilksL(λ) = .965; $F_{(4,752)} = 3,363$; $p < 0,05$; $\eta^2 = .018$). This finding indicates that the scores obtained from the linear component vary depending on inactive participation in sports.

Table 10. MANOVA Test Intergroup Effect Results

Source	Dependent Variable	Sum of Squares	df	Mean of Squares	F	Sig.	η^2
Validated Model	Negative emotions	795,380	2	397,690	5,344	0,005	0,028
	Quality of life	6,356	2	3,178	4,088	0,018	0,021
Resultant	Negative emotions	186169,373	1	186169,373	2501,641	0,000	0,869
	Quality of life	2528,279	1	2528,279	3252,437	0,000	0,896
Inactive Participation in Sports	Negative emotions	795,380	2	397,690	5,344	0,005	0,028
	Quality of life	6,356	2	3,178	4,088	0,018	0,021

When the results obtained for the dependent variables were evaluated using the Bonferroni-adjusted alpha level of 0.025, it was seen that there were significant differences in students' scores of negative emotions ($F(2,377) = 5,34, p=0,005; \eta^2=.028$) and the effect of COVID-19 on quality of life ($F(2,377) = 4,08, p=0,018; \eta^2=.021$) depending on inactive participation in sports. The results are given in Table 10.

According to the Tukey HSD test results conducted in all groups with significant differences, the negative emotions of the students who inactively participate in sports almost every day ($\bar{x}=20,86\pm 0,82$) are significantly lower compared to the students who do not participate in sports inactively in anyway ($\bar{x}=24,77\pm 0,86$). Similarly, the level of impact of COVID-19 on quality of life of students who inactively participate in sports almost every day ($\bar{x}=2,48\pm 0,08$) was found significantly lower than those who do not participate in sports inactively in anyway ($\bar{x}=2,83\pm 1,16$) (table 3).

DISCUSSION AND CONCLUSION

Today, COVID-19 still exists with different mutations and affects life in many ways. Under these circumstances, individuals are likely to experience negative emotions. Negative emotions like anxiety and depression are common among university students. Acquiring the routine of doing sports can be a protective factor in preventing depression, and can be recommended to university students (Zhang et al, 2021). As a result, their quality of life is adversely affected. Within the scope of this research, the effect of negative emotions and COVID-19 on quality of life as dependent variables was considered as a single resultant variable. Thus, the question whether active and inactive participation of university students in sports and their physical activity levels is effective on the life quality resultant of negative emotions and COVID-19 was discussed in the study.

It was observed that physically active students experienced lower levels of negative emotions. Similarly, the impact of COVID-19 on the quality of life was found to be lower in the individuals who were physically active. All those results seem to support the H1 hypothesis. It can be said that students with relatively higher physical activity levels are less nervous, restless, stressful and unhappy, and feel less depressed recently. In this scientific study, it was concluded that the increase in the physical activity levels of adolescents and adults decreased their depression levels (Josefsson et al., 2014). In their study Škrlec et al (2021) examined the relationship between negative emotions (depression, anxiety, stress) and physical activity of university students and they concluded that physical activity decreased the high prevalence of negative emotions. These findings are consistent with the results of our research. The reason for reaching similar findings with the literature can be shown as evidence that physical and mental health are related to each other.

The fact that students who do sports under license experience lower levels of negative emotions and the effects of COVID-19 on their quality of life are low reveals the importance of participation in sports today as it was in the past. Therefore, it can be said this finding supports the H2 hypothesis. Negative emotions are common among university students. Sports can be a protective factor to avoid these emotions and can be recommended to university students (Kim et al, 2020). Sports contributes to the development of a more resilient social profile and a better quality of life (Cevada et al., 2012). Johnston et al (2021) examined the effects of team sports on negative emotions in the study they conducted with university students. The research involved students of a large public university in China. The results of the research showed that team sports can help reduce negative emotions in university students. The findings obtained are consistent with the findings of the current study.

It was observed that students who inactively participated in sports experienced lower levels of negative emotions and their life quality was negatively affected. It can be said that this finding supports the H3 hypothesis. In addition to doing sports under license, it can be concluded that doing activities such as watching sports competitions on television or social media, reading and following sports news, and talking to others about sports make students feel less nervous and depressed. In their study conducted with 1,632 Spanish students, Lera-Lopez et al (2021) emphasized the relationship between inactive participation in sports and the state of participants' wellbeing. Although the fact that there are no studies carried about inactive participation in sports, and the effects of negative emotions and COVID-19 on quality of life is an important limitation, it is thought that these research findings will contribute to the literature.

As a result, it can be said that participation in sports and physical activity have a top-line relationship with negative emotions and quality of life. The importance of both active and inactive participation in sports needs to be clearly demonstrated today when the individuals still suffer from the adverse effects of the epidemic. There are some limitations of this study. First of all, cross-sectional studies do not make it possible to determine the direction of the relationship between variables. This can be considered as a limitation regarding the generalizability of the results. The population of the research consists of a limited number of students from two different state universities. Students from other state and foundation universities in Turkey were not included in the sample. However, one of the strengths of this research is that all the hypotheses are supported, that is, the theoretical framework and the results are claimed to be consistent with each other. The results of the study are especially important in terms of guiding future studies as they were obtained within the period when the effects of the epidemic still exist.

Limitations and Recommendation

Based on the results, university students are recommended to participate in sports. In addition to active participation in sports, the level of exposure to the negative effects of COVID-19 can be reduced by participating in sports activities inactively. Students are also advised to adopt a more physically active lifestyle when it is not possible to participate in sports. In this way, they can feel less nervous and depressed.

A regulatory or mediator role model can be created by including different variables in this research model. In this study, variables like gender were excluded from the analysis. The role of gender can be examined with two-way MANOVA analysis. The research can also be reconstructed with a different sampling method with the participation of more public and private university students.

REFERENCES

- Alkatheri, A.M., Bustami, R.T., Albekairy, A.M., Alanizi, A.H., Alnafesah, R., Almodaimegh, H., Alzahem, A., Aljamaan, K., Zurnuq, S., & Qandil, A.M. (2020). Quality of Life and Stress Level Among Health Professions Students. *Health Professions Education*, 6(2), 201-210. <https://doi.org/10.1016/j.hpe.2019.11.004>.
- An, Y., Yang, Y., Wang, A., Li, Y., Zhang, Q., Cheung, T., Ungvari, G. S., Qin, M.-Z., An, F.-R., & Xiang, Y.T. (2020). Prevalence of depression and its impact on quality of life among frontline nurses in emergency departments during the COVID-19 outbreak. *Journal of Affective Disorders*, 276, 312–315. <https://doi.org/10.1016/j.jad.2020.06.047>.
- Auerbach, R.P., Alonso, J., Axinn, W.G., Cuijpers, P., Ebert, D.D., Green, J.G., & Bruffaerts, R. (2016). Mental disorders among college students in the World Health Organization world mental health surveys. *Psychological medicine*, 46(14), 2955-2970.

- Bailey, A.P., Hetrick, S.E., Rosenbaum, S., Purcell, R., & Parker, A.G. (2017). Treating depression with physical activity in adolescents and young adults: a systematic review and meta-analysis of randomised controlled trials. *Psychol Med*, 1–20.
- Balcıoğlu, İ. (2003). *Sociology and Psychology of Sports*. Istanbul: Bilge Publications.
- Beiter, R., Nash, R., McCrady M, et al. (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *J Affect Disord*, 173:90–96. doi:10.1016/j.jad.2014.10.054.
- Bidwal, M.K., Ip, E.J., Shah, B.M., & Serino, M.J. (2015). Stress, drugs, and alcohol use among health care professional students: a focus on prescription stimulants. *Journal of pharmacy practice*, 28(6), 535-542.
- Brown, L.F., Kroenke, K., Theobald, D.E., Wu, J., & Tu, W. (2010). The association of depression and anxiety with health-related quality of life in cancer patients with depression and/or pain. *Psycho-Oncology*, 19(7), 734-741.
- Cai, L., Wang, S., Huang, Z., & Zhou, Q. (2021). Research On Effects Of Sports As An Auxiliary Therapy To Patients With Anxiety. *Psychiatria Danubina*, 33(suppl 8), 570-576.
- Cevada, T., Cerqueira, L.S., Moraes, H.S.D., Santos, T.M.D., Pompeu, F.A.M.S., & Deslandes, A.C. (2012). Relationship between sport, resilience, quality of life, and anxiety. *Archives of Clinical Psychiatry* (São Paulo), 39, 85-89.
- Chang, S. P., Shih, K. S., Chi, C. P., Chang, C. M., Hwang, K. L., & Chen, Y. H. (2016). Association between exercise participation and quality of sleep and life among university students in Taiwan. *Asia Pacific Journal of Public Health*, 28(4), 356-367.
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (eight edition). Abingdon, Oxon.
- Cakir, G. (2022). The effect of participation in sports on happiness and loneliness: an analysis of university students during the pandemic. *International Sports Studies*, 44(2), 58–72. doi:10.30819/iss.44-2.05.
- Domantay, J.A.A. (2014). Health-related quality of life of future physicians at a medical school in the Philippines: across-sectional study. *SAGE Open*, 4(3). [2158244014545459-].
- Eisenberg, D. Gollust, S.E., Golberstein, E., & Hefner, J.L. (2007). Prevalence and correlates of depression, anxiety, and suicidality among university students. *Am J Orthopsychiatry*, 77(4):534–542. doi:10.1037/0002- 9432.77.4.534.
- Ferrari, A.J., Charlson, F.J., Norman, R.E., Patten, S.B., Freedman, G., Murray, C.J., et al. (2013). Burden of depressive disorders by country, sex, age, and year: Findings from the global burden of disease study 2010. *PLoS Medicine*, 10(11). [DOI:10.1371/journal.pmed.1001547] [PMID] [PMCID].
- Flapper, B.C., Duiverman, E.J., Gerritsen, J., Postema, K., & van der Schans, C.P. (2008). Happiness to be gained in paediatric asthma care. *Eur Resp J*, 32:1555–1562.
- Fredrickson, B.L. (2002). *Positive Emotions*. In C. R.Synder and S.J. Lopez (Eds.), *Handbook of positive psychology*. New York:Oxford University Press.
- Gençöz, T. (2000). Positive and Negative Affect Scale: Validity and reliability study. *Turkish Journal of Psychology*, 15(46), 19-26.
- Gonipath, B., Hardy, L.L., Baur, L.A., Burlutsky, G., & Mitchell, P. (2012). PA and sedentary behaviors and health-related quality of life in adolescents. *Pediatrics*, 130:e167–174.
- Gorczyński, P., Sims-Schouten, W., Hill, D., & Wilson, J.C. (2017). Examining mental health literacy, help seeking behaviours, and mental health outcomes in UK university students. *The Journal of Mental Health Training, Education and Practice*.
- Hidalgo-Rasmussen, C. A., Ramírez-López, G., & Hidalgo-San Martín, A. (2013). Physical activity, sedentary behavior and quality of life in undergraduate adolescents of Ciudad Guzman, State of Jalisco, Mexico. *Ciencia & saude coletiva*, 18(7), 1943.

- Holmes, S., & Dickerson, J. (2003). The Quality Of Life: Desing and Evaluation Of A Self-Assessment Instrument For Use With Cancer Patients. *International Journal Of Nursing Studies*, 40(5), 515-520.
- İslamoğlu, A. H., & Alnaçık, Ü. (2019). *Research Methods in Social Sciences*. Istanbul: Beta Publishing House.
- Johnston, S. A., Roskowski, C., He, Z., Kong, L., & Chen, W. (2021). Effects of team sports on anxiety, depression, perceived stress, and sleep quality in college students. *Journal of American College Health*, 69(7), 791-797.
- Josefsson, T., Lindwall, M., & Archer, T. (2014). Physical exercise intervention in depressive disorders: Meta-analysis and systematic review. *Scandinavian Journal of Medicine & Science in Sports*, 24(2), 259–272. <https://doi.org/10.1111/sms.12050>.
- Kılıç, S. (2013). Sampling methods. *Journal of Mood Disorders*, 3(1), 44-6.
- Kim, A.C.H., Park, S.H., Kim, S., & Fontes-Comber, A. (2020). Psychological and social outcomes of sport participation for older adults: A systematic review. *Ageing & Society*, 40(7), 1529-1549.
- Lera-López, F., Ollo-López, A., & Sánchez-Santos, J. M. (2021). Is passive sport engagement positively associated with happiness?. *Applied Psychology: Health and Well-Being*, 13(1), 195-218.
- Ma, Y.F., Li, W., Deng, H.B., Wang, L., Wang, Y., Wang, P.H., Bo, H.X., Cao, J., Wang, Y., Zhu, L.Y., Yang, Y., Cheung, T., Ng, C. H., Wu, X., & Xiang, Y.T. (2020). Prevalence of depression and its association with quality of life in clinically stable patients with COVID-19. *Journal of Affective Disorders*, 275(1), 145–148. <https://doi.org/10.1016/j.jad.2020.06.033>.
- Massidda, M., Cugusi, L., & Mathieu, A. (2015). Physical activity levels and health-related quality of life in young Italian population. *J Sports Med Phys Fitness*, 55(5), 506-512.
- Moreira, A., Delgado, L., Haahtela, T., Fonseca, J., Moreira, P., Lopes, C., & Castel-Branco, M. G. (2008). Physical training does not increase allergic inflammation in asthmatic children. *European respiratory journal*, 32(6), 1570-1575.
- Mutz, M., & Gerke, M. (2021). Sport and exercise in times of self-quarantine: How Germans changed their behaviour at the beginning of the Covid-19 pandemic. *International Review for the Sociology of Sport*, 56(3), 305-316. <https://doi.org/10.1177/1012690220934335>.
- Nelson, M. E., Rejeski, W. J., Blair, S. N., Duncan, P. W., Judge, J. O., King, A. C., et al. (2007). Physical activity and public health in older adults: Recommendation from the American College of Sports Medicine and the American Heart Association. *Circulation*, 116, 1094–1098.
- Öztürk, M. (2005). *The validity and reliability of the international physical activity questionnaire and determination of physical activity levels in university students*. Master Thesis. Hacettepe University, Ankara.
- Pennington, C.G. (2021). Applying the Transtheoretical Model of Behavioral Change to Establish Physical Activity Habits. *Journal of Education and Recreation Patterns (JERP)*, 2(1), 11-20. DOI: <https://doi.org/10.53016/jerp.v2i1.6>
- Ratten, V. (2020). Coronavirus disease (COVID-19) and sport entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, 26(6),1379-1388. <https://doi.org/10.1108/IJEER-06-2020-0387>.
- Repišti, S., Jovanović, N., Kuzman, M. R., Medved, S., Jerotić, S., Ribić, E., & Russo, M. (2020). How to measure the impact of the COVID-19 pandemic on quality of life: COV19-QoL– the development, reliability and validity of a new scale. *Global Psychiatry*, 3(2), 201-210. <https://doi.org/10.2478/gp-2020-0016>.
- San Román-Mata, S., Puertas-Molero, P., Ubago-Jiménez, J.L., & González-Valero, G. (2020). Benefits of Physical Activity and Its Associations with Resilience, Emotional Intelligence, and Psychological Distress in University Students from Southern Spain.

- Int J Environ Res Public Health*, 22;17(12):4474. doi: 10.3390/ijerph17124474. PMID: 32580322; PMCID: PMC7344387.
- Shamsuddin, K., Fadzil, F., Ismail, W.S., Shah, S.A., Omar, K., Muhammad, N.A., Jaffar, A., Ismail, A., & Mahadevan, R. (2013). Correlates of depression, anxiety and stress among Malaysian university students. *Asian journal of psychiatry*, 6(4), 318–323. <https://doi.org/10.1016/j.ajp.2013.01.014>.
- Škrlec, I., Talapko, J., Pustijanac, E., & Meštrović, T. (2021, January). Depression, anxiety, stress and physical activity in health-related university students during COVID-19. *In Proceedings*, (pp. 1-6).
- Sundell, K., Bergström, S., Hedlin, G., Ygge, B.M., & Tunstetter, A. (2011). Quality of life in adolescents with asthma, during the transition period from child to adult. *Clin Respir J*, 5:195–202.
- Sümen, A., & Adibelli, D. (2021). Adaptation of the COVID-19-QoL Scale to Turkish culture: Its psychometric properties in diagnosed and undiagnosed individuals. *Death Studies*, <https://doi.org/10.1080/07481187.2021.1925376>.
- Veenhoven, R. (2013). The Four Qualities of Life Ordering Concepts And Measures Of The Good Life. *The Exploration of Happiness*, 195-226, Springer.
- Wanden-Berghe, C., Martín-Rodero, H., Rodríguez-Martín, A., Novalbos-Ruiz, J., Martínez, E., Sanz-Valero, J., & Irlles, J. (2015). Calidad de vida y sus factores determinantes en universitarios españoles de Ciencias de la Salud. *Nutrición Hospitalaria*, 31(2), 952-958.
- Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief measure of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070. doi: 10.1037//0022-3514.54.6.1063.
- Wilke, J., Mohr, L., Tenforde, A.S., Edouard, P., Fossati, C., González-Gross, M., Ramirez, C. S., Laino, F., Tan, B., Pillay, J. D., Pigozzi, F., Jimenez-Pavon, D., Novak, B., Jaunig, J., Zhang, M., van Poppel, M., Heidt, C., Willwacher, S., Yuki, G. & Hollander, K. (2021). A pandemic within the pandemic? Physical activity levels substantially decreased in countries affected by COVID-19. *International Journal of Environmental Research and Public Health*, 18(5), 2235. <https://doi.org/10.3390/ijerph18052235>.
- Wolf, S., Zeibig, J. M., Giel, K., Granz, H., Sudeck, G., & Thiel, A. (2020). Sports Activity and Mental Diseases. *Psychotherapie, Psychosomatik, Medizinische Psychologie*, 70(9-10), 412-428.
- Yeo, T. J. (2020). Sport and exercise during and beyond the COVID-19 pandemic. *European Journal of Preventive Cardiology*, 27(12), 1239-1241. <https://doi.org/10.1177%2F2047487320933260>.
- Yılmaz, Ö., Boz, H., & Arslan, A. (2017). Validity-Reliability Study of Turkish Short Form of Depression Anxiety Stress Scale (DASS 21). *Journal of Finance, Economics and Social Studies*, 2(2), 78-91.
- Zhang, L., Zhao, S., Weng, W., Lin, Q., Song, M., Wu, S., & Zheng, H. (2021). Frequent sports dance may serve as a protective factor for depression among college students: a real-world data analysis in China. *Psychology research and behaviour management*, 14, 405.

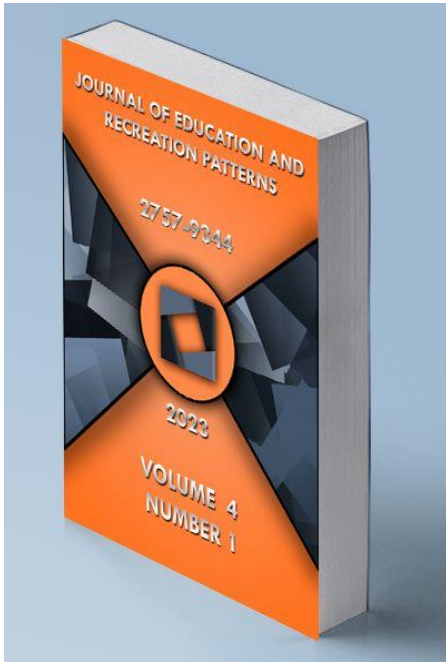
Copyright: © 2023 (Çakır, G.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com


Replicating Inclusivity: The Relationship between Directors' Cup Rankings and LGBTQI+ Inclusive NCAA Athletic Departments

Sarah STOKOWSKI¹, Andrew RUDD², Chris CORR³,
Karina JOLLY⁴, Alison FRIDLEY⁵


To cite this article:


Stokowski, S., Rudd, A., Corr, C., Jolly, K., & Fridley, A. (2023). Replicating inclusivity: The relationship between Directors' Cup rankings and LGBTQI+ inclusive NCAA athletic departments. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 75-86. DOI: <https://doi.org/10.53016/jerp.v4i1.95>


Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Sarah Stokowski, Clemson University, stoko@clemson.edu,  <https://orcid.org/0000-0002-7368-7224>

² Andrew Rudd, Lincoln Memorial University, andrew_rudd@lmunet.edu,  <https://orcid.org/0000-0003-1746-9684>

³ Chris Corr, Troy University, ccorr@troy.edu,  <https://orcid.org/0000-0002-8729-3031>

⁴ Karina Jolly, Troy University, kjolly201192@troy.edu,  <https://orcid.org/0009-0007-2303-7657>

⁵ Alison Fridley, University of Southern Mississippi, alison.fridley@usm.edu  <https://orcid.org/0000-0003-0962-3370>

Replicating Inclusivity: The Relationship between Directors' Cup Rankings and LGBTQI+ Inclusive NCAA Athletic Departments

Sarah STOKOWSKI¹, Andrew RUDD², Chris CORR³, Karina JOLLY⁴, Alison FRIDLEY⁵

ARTICLE INFORMATION

Original Research Paper

Received 20.01. 2023

Accepted 11.05. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 75-86

ABSTRACT

The replication of successful National Collegiate Athletic Association (NCAA) athletic departments is commonly pursued through the targeted hiring of athletic administrators at successful athletic departments. The significance on replicating organizational success through this transfer of people is indicative of the emphases placed on winning and revenue acquisition distinct to collegiate athletic departments. During this transfer, athletic directors inherently infuse transferred organizational practices and logics into the replicating organization. Utilizing Directors' Cup points as a determinant metric of success, this study examined the relationship between success in Division I collegiate athletics and athletic department inclusivity of LGBTQI+ members. Findings illustrated that inclusivity of LGBTQI+ members were a statistically significant predictor of Directors' Cup Scores among NCAA Division I member institutions. Such findings are indicative of the importance in fostering an inclusive organizational environment relative to success in collegiate athletics. Further implications illustrate the positive perpetuation of LGBTQI+ inclusion through the attempted replication of successful collegiate athletic departments.

Keywords: College Athletics, Director's Cup, Inclusivity, LGBTQI+, Winning Success



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

Within a given institutional field, similarly situated competitors attempt to replicate the practices, routines, and policies of successful organizations (Kacmar et al., 1999; Pennington, 2021; Tsang & Kwan, 1999; Winter & Szulanski, 2002). Replication is motivated by a desire to “imitate the success of others in the attempt to close gaps or share in gains” (Baden-Fuller & Winter, 2005, p. 3). Accordingly, the process of organizational replication is the direct result of organizational desire to be successful within a specific institutional field (Teece, 1976; Winter, 1995).

The presence of institutional isomorphism among National Collegiate Athletic Association (NCAA) member institutions is ubiquitous. Collegiate athletic departments are strikingly similar in their formation, development, and operation (e.g., Cunningham & Ashley, 2001; Nite & Edwards, 2021; Smith & Washington, 2015; Ward, 2015). Such institutional similarity is attributed to the prevalent practice of organization replication (Atwater et al., 2022). Organizational replication in collegiate athletics is executed through the transfer of people, specifically, the targeted hiring of athletic administrators at successful athletic departments (Atwater et al., 2022; Levine, 2015). To this, we often see intercollegiate sport dominated by traditional ideologies in which those in positions of power are White, cisgender, heterosexual men (Springer et al., 2022; Wood et al., 2019). Isomorphism through replication in collegiate athletics is “...not surprising, since less successful [athletic] departments and teams likely model their strategies and performance scripts after those of more successful (in terms of wins and losses) programs” (Corr et al., 2020, p. 266). In sum, athletic departments seek to replicate the structures and systems (e.g., logics) of successful athletic departments through the transfer of people.

In sport spaces, replication continues to manifest heteronormative ideologies (Smith & Washington, 2014; Waldron, 2016). Although 12% of college athletes are members of the LGBTQI+ (lesbian, gay, bisexual, transgender, queer/questioning, intersex, and other identities) community (Turk et al., 2019), institutional policies encourage do not allow this population to live authentically (DeFoor et al., 2018; Mann & Krane, 2019; Satore & Cunningham, 2019; Turk et al., 2019). Dispute the accumulating evidence that demonstrates the importance of inclusion (Barber & Krane, 2007; Cunningham, 2015; Cunningham & Melton, 2011; Wolf-Wendel et al., 2008), inequitable practices, such as replication, continues to reinforce prejudicial behaviors (Herek, 2009).

Success in collegiate athletics is inextricably linked to winning athletic competitions. As organizational replication is inherently about competitive positioning (Teece, 1976; Winter & Szulanski, 2002), institutional athletic stakeholders (e.g., university presidents, board of trustees) seek to hire athletic administrators from athletic departments with winning teams (Kimura, 2018; Read, 2017). Such desire to achieve and maintain success in collegiate athletics is evidenced by the routine transfer of people inter-athletic department and consistent with the prevailing logic pervasive among the NCAA and member institutions that places overt value on athletics success – specifically in profit-sports (i.e., Football, Men’s Basketball) and revenue acquisition (e.g., Corr et al., 2020; Nite et al., 2019; Southall & Staurowsky, 2013).

Recognizing the roles and the intersection of identities (e.g., LGBTQI+, athlete, student), has been shown to contribute to athlete success (Fridley et al., 2023). Additionally, investing in athlete development programming can increase the experiences of college athletes (Stokowski et al., 2020). It is vital that institutions and athletic departments establish, promote, and integrate inclusive practices to increase production and enhance overall satisfaction (Cunningham, 2015; Kim et al., 2022; Shore et al., 2011).

LEARFIELD Directors' Cup Rankings

The prominent emphasis on winning in collegiate athletics is represented in the prestige of winning the annual National Association of Collegiate Directors of Athletics (NACDA) LEARFIELD Directors' Cup (Directors' Cup). The Directors' Cup recognizes the most successful (i.e., winningest) athletic department competing in collegiate athletics on an annual basis. Athletic departments are scored on evaluation factors that take into account aggregated seasonal successes in all sponsored sports (e.g., men's, women's, revenue, non-revenue) (NACDA, n.d.). Indicative of the prestige of the Directors' Cup rankings, athletic directors are often rewarded for achieving a certain Directors' Cup ranking. In 2018, for instance, the University of Tennessee awarded then athletic director Phillip Fulmer a \$90,000 bonus for finishing 35th overall in Directors' Cup standings (Athletic Business, 2018). Given evolving compensation structures for administrators, Directors' Cup standings have become a quantifiable metric for determining athletic success (Lattinville & Denny, n.d.). As institutional athletic stakeholders value athletic success (i.e., winning) within the hiring process, Directors' Cup standings and rankings occupy a significant factor in the promotion or hiring of athletic administrators. The prevalence of standard hiring practices (e.g., hiring firms) and the uniform career trajectory of athletic directors perpetuates isomorphism among NCAA member institutions (Cunningham & Ashley, 2001; Smith & Washington, 2013) in which Directors' Cup standings are indicative of success and, subsequently, qualification for promotion (Lawrence et al., 2012; Steinbach, 2006; Stokowski et al., 2020).

College Sport Inclusivity

The emphasis on winning in collegiate athletics may have implications for promoting inclusivity in athletic departments. As such, it is important to consider the potential benefits of LGBTQI+ inclusive initiatives for institutional athletic stakeholders. Historically, collegiate athletic departments have been male dominated within leadership positions and heteronormative in construction (Kauer & Krane, 2006; Lenskyj, 2012; Mann & Krane, 2018; Newhall & Walker, 2018; Wood et al., 2019). LGBTQI+ members are at increased risk of being rejected, discriminated, and/or harassed in the field of collegiate athletics (Anderson et al., 2019; Anderson, Stokowski et al., 2023; Anderson, Stokowski, & Turk, 2022; Bass et al., 2015; Kosciw et al., 2014; Murphy, 2012; Turk et al., 2019). Such increased risk manifests in perceived lack of institutional support among LGBTQI+ members (Kosciw et al., 2014) and can include psychological disruptions (e.g., depression, substance abuse, suicidal ideation) (Cunningham, 2009; Steck & Perry, 2016). Accordingly, extant literature has established that the traditionally exclusive setting of collegiate athletics has adverse effects on workplace productivity and employee satisfaction (Cunningham, 2015; Kim et al., 2022; Shore et al., 2011).

LGBTQI+ inclusive organizations promote individual self-expression which is positively related to increased psychological outcomes among employees (e.g., *morale*) (Cunningham et al., 2014; Shore et al., 2011). From an organizational standpoint, such outcomes relative to LGBTQI+ initiatives are inherently correlated to efficiency and effectiveness (Cunningham, 2011; Cunningham, 2015; Walker & Melton, 2015). While the NCAA (n.d.) provides a framework to promote inclusion within member athletic departments, organizational and institutional change regarding LGBTQI+ inclusion must be formulated and perpetuated by those in leadership positions (Cunningham, 2015; Ruiz et al., 2011). Given the institutional emphasis placed on *winning* in collegiate athletics (e.g., Corr et al., 2020; Nite et al., 2019; Southall & Staurowsky, 2013), athletic administrators may be more inclined to pursue LGBTQI+ inclusive initiatives if such initiatives positively benefit institutional athletic stakeholders themselves.

METHOD

Measuring Inclusivity: Athletic Equality Index

Athlete Ally (n.d.) is an organization that champions inclusive excellence among NCAA member institutions. The Athletic Equality Index (AEI) measures LGBTQI+ “inclusion practices and policies in NCAA athletic departments” (Athlete Ally, n.d., para. 2). AEI total scores range from 0 to 100 depending on athletic departments’ performances in eight subareas:

1. Nondiscrimination policy (0 to 25),
2. Transgender inclusion policy (0 to 15),
3. Sexual misconduct policy (0 to 15),
4. Fan codes of conduct (0 to 10),
5. Annual partnership/ collaboration (0 to 15),
6. LGBTQ educational resources (0 to 10),
7. Pro-LGBTQ training for staff (0 to 5),
8. And pro-LGBTQ training for athletes (0 to 5).

Scores were collected from Athlete Ally's official website (Athlete Ally, n.d.). It is worth noting that Athlete Ally calculates AEI scores among NCAA member athletic departments on a continuous basis. Accordingly, an inherent limitation of this study is the calculated AEI scores utilized during data analysis.

LEARFIELD Directors’ Cup Rankings

Institutional points from the 2021-2022 Directors’ Cup were used as a measure of success among NCAA Division I members. Directors’ Cup points are determined relative to team success (e.g., tournaments, conference championships, bowl games, etc.) (NACDA, n.d.). A total of 295 ($n = 295$) NCAA Division I member institutions were included in statistical analysis. Limitations exist relative to the utilization of Directors’ Cup points as the sole determinant metric of athletics success. While the institutional emphases placed on winning and revenue generation in collegiate athletics lends itself to Directors’ Cup points as a justifiable metric for determining athletics success, a multitude of additional factors contribute and are indicative of athletics success.

Analysis

A linear regression was conducted to determine if Division I university’s LBGTQIA+ inclusion scores (AEI) are predictive of athletic department success (as measured by Directors’ Cup scores). Additionally, an independent t test was performed to determine if university athletic departments scoring above the median on LBGTQIA+ inclusion (AEI scores) have more success (as measured by Directors’ Cup scores) than those scoring at or below the median. However, it is important to note that a significant amount of positive skewness was found in the dependent variable (Directors’ Cup scores). Skewness values outside the range of -1 to +1 indicate extreme skewness. The skewness value for the Directors’ Cup scores was 1.8. Consequently, a log₁₀ transformation was performed which significantly lowered the amount of skewness (coefficient of skewness = .22). This log₁₀ variable was then used in the regression analysis and independent t test.

FINDINGS

Descriptive statistics for the study variables are found in Table 1. Results from the linear regression analysis showed that the regression model was statistically significant ($R^2 = .11$, $F(1, 293) = 37.11$, $p < .000$). Thus, AEI scores explained 11% of the variance in Directors' Cup scores. Further, AEI scores were a statistically significant predictor of Directors' Cup Scores ($B = .006$, $p < .05$). Given that the regression coefficient is a product of log10 transformation units, a more practical interpretation is that for every one unit increase in AEI scores, Directors' Cup scores will increase by 6%.

In addition, results from an independent t test showed a statistically significant difference in Directors' Cup points ($p < .001$, $t(293) = -4.917$) between athletic departments scoring above the AEI median compared to those at or below ($Mdn = 35$). On average athletic departments with scores above the AEI median had more Directors' Cup points ($M = 2.26$, $SD = .49$) compared to those scoring at or below the median ($M = 1.99$, $SD = .44$).

Table 1. Means and Standard Deviations for Study Variables

Variable	M	SD
Final Points	240.34	287.87
AEI Total	39.17	25.52
AEI Nondiscrimination Policy	17.17	6.86
AEI Trans Inclusion Policy	3.12	5.46
AEI Sexual Harassment Policy	7.90	5.63
AEI Fan Code of Conduct	2.34	4.03
AEI Annual Partnerships/Collaboration	3.41	5.77
AEI LGBTQ Educational Resources	3.24	4.05
AEI Staff Trainings	1.05	2.04
AEI Athlete Trainings	1.03	2.02

Note: Final Points are scores from the Learfield Directors' Cup and are in raw score form.

Lastly, among Power-5 conference members, mean scores indicate Power-5 member institutions possess the highest Directors' Cup points and AEI scores. However, the Southeastern Conference (SEC) was an exception to this finding with an AEI score lower than seven conferences outside the Power-5 (see Table 2). Notably, Ivy League member institutions had the highest overall mean AEI score ($M = 77$).

Table 2. Comparison of Conferences on AEI Total Scores and Learfield Directors' Cup Final Points

Conference	AEI Scores			Directors' Cup Final Points			Director's Cup Final Points Log Transformation	
	M	N	SD	M	N	SD	M	SD
Missouri Valley	34.17	6	21.545	89.7500	6	35.92597	1.9239	.17568
Mountain West	27.73	11	15.551	153.6591	11	83.76159	2.1235	.26091
Northeast	19.37	8	16.784	68.7500	8	39.56821	1.7592	.29314
OVC	18.75	8	10.607	59.6875	8	45.48857	1.6158	.46072
PAC-12	67.08	12	25.802	709.0417	12	290.17457	2.8117	.20577
Patriot	43.33	9	29.047	95.9444	9	34.84918	1.9550	.16632
SEC	42.14	14	21.636	768.4643	14	264.58291	2.8536	.18743
SoConn	20.71	7	9.322	85.4286	7	41.03700	1.8773	.25358
Southland	27.50	6	13.323	58.1667	6	28.75703	1.7086	.25545
Summit	28.33	6	19.916	158.6250	6	145.90577	2.0010	.50148
Sun Belt	31.00	10	10.220	114.0500	10	51.49350	2.0140	.21161
SWAC	10.00	5	14.142	52.0000	5	16.04681	1.6981	.14312
WAC	28.75	8	11.573	107.2500	8	78.95161	1.9078	.36818
WCC	37.78	9	24.889	230.3056	9	215.17630	2.2236	.36176

Table 2. Comparison of Conferences on AEI Total Scores and Learfield Directors' Cup Final Points (Continuation of Table 2.)

Conference	AEI Scores			Directors' Cup Final Points			Director's Cup Final Points Log Transformation	
	M	N	SD	M	N	SD	M	SD
ACC	55.67	15	28.276	636.9833	15	299.36852	2.7479	.24450
American East	41.11	9	26.667	76.6111	9	72.45075	1.7427	.35769
American	38.18	11	11.677	150.2273	11	96.64998	2.0643	.36681
ASUN	24.44	9	20.378	103.2778	9	81.03553	1.9128	.31385
Atlantic 10	43.89	9	29.977	86.0556	9	35.89607	1.8948	.20799
Big 12	49.50	10	34.355	648.7750	10	350.15886	2.7614	.21832
Big East	31.36	11	14.678	181.5909	11	136.97734	2.1223	.38763
Big Sky	39.44	9	13.566	110.1667	9	105.12403	1.8857	.38153
Big South	20.00	6	10.488	105.0417	6	91.48667	1.8678	.41104
Big Ten	59.29	14	23.847	645.3036	14	266.51545	2.7817	.15443
Big West	48.33	9	24.622	97.8889	9	54.29881	1.9099	.31834
CAA	43.33	9	24.749	98.8333	9	50.92028	1.9285	.27511
Conference USA	26.07	14	14.166	104.9643	14	43.15957	1.9838	.19556
Horizon League	49.44	9	28.443	43.3889	9	25.86718	1.5709	.25408
Ivy League	77.50	8	27.646	387.5313	8	257.43329	2.4819	.36193
MAAC	43.33	9	26.575	60.6667	9	41.43066	1.7043	.27049
MAC	41.36	11	31.945	97.2727	11	56.19625	1.9000	.31427
MEAC	15.00	4	4.082	49.1250	4	33.71047	1.6198	.28151

Note: Final Points scores from the Learfield Directors' Cup are in raw score and log transformation forms.

DISCUSSION

While athletic departments operate within a hyper-commercialized institutional setting and have adopted logics that emphasize the pursuit of revenue acquisition (e.g., Corr et al., 2020; Nite et al., 2019; Southall & Staurowsky, 2013), the findings from this study indicate that LQBTQI+ inclusive initiatives are of strategic value to administrators in pursuit of athletic success and, subsequently, revenue acquisition. As athletic department revenue is inextricably linked to success in collegiate athletics (i.e., winning), the dominant institutional logic pervasive to collegiate athletics, specifically among NCAA Division I member institutions, can remain in place while progressive and inclusive practices and cultures are incorporated into such embedded operating logic (Atwater et al., 2022; Lazaric, 2010; Kim et al., 2022; Thornton & Ocasio, 2008). Such findings align with extant literature (e.g., Cunningham 2009; 2015; Turk et al., 2019; Walker & Melton, 2019); and are indicative of the necessitation (both ethically and financially) of cultivating socially inclusive cultures within collegiate athletic departments.

Given that institutional athletic stakeholders seek to replicate successful athletic departments, the relationship between LQBTQI+ inclusion and athletic department success cannot be understated. Replication through the transfer of people, accordingly, includes the transfer of organizational values – both constructive and destructive (i.e., deviance) – to the organization seeking to replicate. Such logic transplantation inherently involves “the relocation of a whole or partial institutional logic from a home location to a host location” (Tan & Wong, 2011, p. 377). As athletic administrators and pertinent stakeholders seek to replicate successful athletic departments, athletic departments situated highly in Directors' Cup rankings inclination to be more inclusive of LQBTQI+ organizational members portends positively across the field of collegiate athletics. Such inclusion among athletic departments is reflective of social initiatives seeking inclusivity among marginalized populations and is a striking juxtaposition to the historical patriarchal arrangement and heteronormative formation of collegiate athletics.

CONCLUSION

LGBTQI+ inclusive athletic departments inherently have a more supportive workplace environment. Within such a supportive workplace environment, organizational members are inclined to have greater rates of workplace satisfaction and, accordingly, productivity. Given increasing rates of employee satisfaction and workplace productivity, it stands to reason that inclusive athletic departments would function more efficiently and effectively. Accordingly, while replication of inclusive athletic departments is of social value, the findings of this study illustrate that organizational replication of athletic departments with LGBTQI+ inclusive practices can serve as a mechanism in which to achieve success in collegiate athletics.

As evidenced by the deep seeded social tensions affecting marginalized groups, embedded and replicated logics often do not change (Atwater et al., 2022; Thornton & Ocasio, 2008). However, the duality between preservation of traditionally successful organizational practices and progressivity is distinctly beneficial for organizations that exist within competitive marketplaces (Atwater et al., 2022; Lazaric, 2010). While the findings of this study are illustrative of the direct benefit to athletic departments in fostering an inclusive culture, the specific finding indicating SEC member institutions as less inclusive of LGBTQI+ members is noteworthy. Given the geographic formation (and corresponding history) of SEC member institutions, an examination of inclusivity among SEC members institutions is warranted. While cultural customs and norms can serve as barriers to organizational replication, the transfer of people can mitigate much of this deterrent to the replication of progressive organizational practices (Atwater et al., 2022; Baden-Fuller & Winter, 2005; Sake, 2004).

REFERENCES

- Alkatheri, A.M., Bustami, R.T., Albekairy, A.M., Alanizi, A.H., Alnafesah, R., Almodaimegh, H., Alzahem, A., Aljamaan, K., Zurnuq, S., & Qandil, A.M. (2020). Quality of Life and Stress Level Among Health Professions Students. *Health Professions Education*, 6(2), 201-210. <https://doi.org/10.1016/j.hpe.2019.11.004>.
- Athlete Ally. (n.d.). About Athlete Ally. *Athlete Ally*. <https://www.athleteally.org/about/>
- Athletic Business. (2018, July 1). Tennessee AD gets \$90k bonus for Directors' Cup rank of 35th. *Athletic Business*. <https://www.athleticbusiness.com/operations/budgeting/news/15154673/tennessee-ad-gets-90k-bonus-for-directors-cup-rank-of-35th>
- Atwater, C., Corr, C., Whelan, C. (2022). Organizational replication and spending patterns among FBS football and Division I basketball programs. *The International Journal of Sport and Society*, 14(1), 105-125. <https://doi.org/10.18848/2152-7857/CGP/v14i01/105-125>
- Anderson, A. R., Smith, C. M., & Stokowski, S. E. (2019). The impact of religion and ally identity on individual sexual and gender prejudice at an NCAA Division II institution. *Journal of Issues in Intercollegiate Athletics*, 12, 154-177.
- Anderson, A. R., Stokowski, S., Smith, C. M., & Turk, M. R. (2023). "You have to validate it": Experiences of female sexual minority student-athletes. *Journal of Homosexuality*, 70(3), 497-518. <https://doi.org/10.1080/00918369.2021.1990688>
- Anderson, A. R., Stokowski, S., & Turk, M. R. (2022). Sexual minorities in intercollegiate athletics: religion, team culture and acceptance. *Sport in Society*, 25(11), 2303-2322. <https://doi.org/10.1080/17430437.2021.1933452>
- Baden-Fuller, C., & Winter, S. G. (2005). Replicating organizational knowledge: Principles or templates?. *Papers on Economics and Evolution*, 0515, 1-40. <https://dx.doi.org/10.2139/ssrn.1118013>

- Barber, H., & Krane, V. (2007). Creating a positive culture for lesbian, gay, bisexual, and transgender youths. *Journal of Physical Education, Recreation & Dance*, 78(7), 6-52. <https://doi.org/10.1080/07303084.2007.10598047>
- Bass, J., Hardin, R., & Taylor, E. A. (2015) The glass closet: Perceptions of homosexuality in intercollegiate sport. *Journal of Applied Sport Management* 7(4). <https://doi.org/10.18666/JASM-2015-V7-I4-5298>
- Corr, C., Southall, R. M., & Nagel, M. S. (2020). Southeastern Conference recruiting and the maintenance of Power-5 college sport. *Journal of Issues in Intercollegiate Athletics*, 13, 252-272.
- Corr, C., Southall, C., & Southall, R. M. (2022). The ESPNification of Football Bowl Subdivision college football: The adoption of an integrated marketing communication televisuality in Football Bowl Subdivision bowl game broadcasts. *International Journal of Sport Communication*, 15(2), 139-147. <https://doi.org/10.1123/ijsc.2021-0124>
- Cunningham, G. B. (2009). Understanding the diversity-related change process: A field study. *Journal of Sport Management*, 23(4), 407-428. <https://doi.org/10.1123/jsm.23.4.407>
- Cunningham, G. B. (2015). Creating and sustaining workplace cultures supportive of LGBT employees in college athletics. *Journal of Sport Management*, 29(4), 426-442. <https://doi.org/10.1123/jsm.2014-0135>
- Cunningham, G. B., & Ashley, F. B. (2001). Isomorphism in NCAA athletic departments: The use of competing theories and advancement of theory. *Sport Management Review*, 4(1), 47-63. [https://doi.org/10.1016/S1441-3523\(01\)70069-1](https://doi.org/10.1016/S1441-3523(01)70069-1)
- Cunningham, G., & Melton, N. (2012). Prejudice against lesbian, gay, and bisexual coaches: The influence of race, religious fundamentalism, modern sexism, and contact with sexual minorities. *Sociology of Sport Journal*, 29(3), 283-305. <https://doi.org/10.1123/ssj.29.3.283>
- DeFoor, M. T., Stepleman, L. M., & Mann, P. C. (2018). Improving Wellness for LGB Collegiate Student-Athlete Through Sports Medicine: A Narrative Review. *Sports Medicine - Open*, 4(1), 1-10. <https://doi.org/10.1186/s40798-018-0163-y>
- Fridley, A., Springer, D., & Stokowski, S., & Anderson, A. (2023). Athlete-Student-Influencer: How the introduction of NIL in intercollegiate athletics further complicates Role Theory. *Sport Sociology Journal*. <https://doi.org/10.1123/ssj.2022-0139>
- Herek, G. M., Gillis, J. R., & Cogan, J. C. (1999). Psychological sequelae of hate-crime victimization among lesbian, gay, and bisexual adults. *Journal of Consulting and Clinical Psychology*, 67(6), 945-951. <https://doi.org/10.1037/0022-006X.67.6.945>
- Kacmar, K. M., Bozeman, D. P., Carlson, D. S., & Anthony, W. P. (1999). An examination of the perceptions of organizational politics model: Replication and extension. *Human Relations*, 52(3), 383-416. <https://doi.org/10.1023/A:1016949222512>
- Kauer, K. J., & Krane, V. (2006). " Scary dykes" and" feminine queens": Stereotypes and female collegiate athletes. *Women in Sport & Physical Activity Journal*, 15(1), 42-55. <https://doi.org/10.1123/wspaj.15.1.42>
- Kim, K., Pickett, A. C., Stokowski, S., & Han, J. (2022). Promoting Educational Outcomes Through Openness to Diversity: An Exploration of Sport and Physical Activity. *Journal of Education and Recreation Patterns (JERP)*, 3(2), 60-76. <https://doi.org/10.53016/jerp.v3i2.52>
- Kimura, A. (2018). *The impact of search firm use in athletic director hires based on athletic, academic, and financial measures of Division I Power Five institutions* (Publication No. 10788624) [Doctoral dissertation, The University of North Carolina at Chapel Hill]. ProQuest Dissertations Publishing.
- Kosciw, J., Byard, E., Fischer, S. N., & Joslin, C. (2014). Gender equity and lesbian, gay,

- bisexual, and transgender issues in education. In S. S. Klein, B. Richardson, D. A. Grayson, L. H. Fox, C. Kramarae, D. S. Pollard, & C. A. Dwyer (Eds.), *Handbook for achieving gender equity through education* (pp. 583-602). Routledge.
- Lattinville, R., & Denny, R. (n.d.). 2020 FBS athletics directors' compensation survey. *Athletic Director U*. <https://athleticdirector.uconn.edu/articles/2020-fbs-athletics-directors-compensation-survey/>
- Lawrence, H. J., Li, M., Regas, J. S., & Kander, J. (2012). National Association of Collegiate Directors of Athletics Directors' Cup standings: Predictors of success. *Journal of Issues in Intercollegiate Athletics*, 5, 207-224.
- Lazaric, N. (2008). Routines and routinization: An exploration of some micro-cognitive foundations. In M. C. Becker (Ed.), *Handbook of organizational routines* (pp. 205-227). Edward Elgar. <https://doi.org/10.4337/9781848442702.00017>
- Lenskyj, H. J. (2013). Reflections on communication and sport: On heteronormativity and gender identities. *Communication & Sport*, 1(1-2), 138-150. <https://doi.org/10.1177/2167479512467327>
- Levine, E. (2015). One coach, two schools: Double duty in the SEC since 2000. *Saturday Down South*. <https://www.saturdaydownsouth.com/sec-football/one-coach-two-schools-double-duty-sec-since-2000/>
- Mann, M., & Krane, V. (2018). Inclusion and normalization of queer identities in women's college sport. *Women in Sport and Physical Activity Journal*, 26(2), 76-88. <https://doi.org/10.1123/wspaj.2017-0033>
- Murphy, H. E. (2012). Improving the lives of students, gay and straight alike: Gay-straight alliances and the role of school psychologists. *Psychology in the Schools*, 49(9), 883-891. <https://doi.org/10.1002/pits.21643>
- National Association of Collegiate Directors of Athletics. (n.d.). LEARFIELD Directors' Cup scoring structure. *NACDA*. <https://nacda.com/sports/2018/7/17/directorscup-nacda-directorscup-scoring-html.aspx>
- National Collegiate Athletic Association. (n.d.). Inclusive interaction. *NCAA*. <https://www.ncaa.org/sports/inclusion>
- Newhall, K. E., & Walker, N. A. (2018). Sports administration: Heteronormative presents, queer futures. In V. Krane (Ed.), *Sex, gender, and sexuality in sport* (pp. 123-141). Routledge. <https://doi.org/10.4324/9781315114996-8>
- Nite, C., & Edwards, J. (2021). From isomorphism to institutional work: Advancing institutional theory in sport management research. *Sport Management Review*, 24(5), 815-838. <https://doi.org/10.1080/14413523.2021.1896845>
- Nite, C., Ige, A., & Washington, M. (2019). The evolving institutional work of the National Collegiate Athletic Association to maintain dominance in a fragmented field. *Sport Management Review*, 22(3), 379-394. <https://doi.org/10.1016/j.smr.2018.05.002>
- Pennington, C. G. (2021). Applying the transtheoretical model of behavioral change to establish physical activity habits. *Journal of Education and Recreation Patterns (JERP)*, 2(1), 11-20. DOI: <https://doi.org/10.53016/jerp.v2i1.6>
- Read, A. (2017). An analysis of search firm success in college football head coach hiring (106072770) [Doctoral dissertation, The University of North Carolina at Chapel Hill]. ProQuest Dissertations Publishing.
- Ruiz, P., Ruiz, C., & Martínez, R. (2011). Improving the "leader-follower" relationship: Top manager or supervisor? The ethical leadership trickle-down effect on follower job response. *Journal of Business Ethics*, 99(4), 587-608. <https://doi.org/10.1007/s10551-010-0670-3>
- Sako, M. (2004). Supplier development at Honda, Nissan and Toyota: Comparative case studies of organizational capability enhancement. *Industrial and Corporate Change*, 13(2), 281-308. <https://doi.org/10.1093/icc/dth012>

- Sartore, M. L., & Cunningham, G. B. (2009). Gender, sexual prejudice and sport participation: Implications for sexual minorities. *Sex Roles, 60*(1), 100-113. <https://doi.org/10.1007/s11199-008-9502-7>
- Shore, L. M., Randel, A. E., Chung, B. G., Dean, M. A., Holcombe Ehrhart, K., & Singh, G. (2011). Inclusion and diversity in work groups: A review and model for future research. *Journal of Management, 37*(4), 1262-1289. <https://doi.org/10.1177/0149206310385943>
- Smith, J., & Washington, M. (2014). Advancing isomorphism in higher education: A critical analysis of the careers of intercollegiate athletic directors. *Journal of Contemporary Athletics, 8*(1), 15-35.
- Southall, R. M., & Staurowsky, E. J. (2013). Cheering on the collegiate model: Creating, disseminating, and imbedding the NCAA's redefinition of amateurism. *Journal of Sport and Social Issues, 37*(4), 403-429. <https://doi.org/10.1177/0193723513498606>
- Springer, D. L., Stokowski, S., & Zimmer, W. (2022). The coin model of privilege and critical allyship: Confronting social privilege through sport management education. *Sport Management Education Journal, 16*(1), 66-74. <https://doi.org/10.1123/smej.2020-0093><https://doi.org/10.1123/smej.2020-0093>
- Steck, A. K., & Perry, D. R. (2016). Fostering safe and inclusive spaces for LGBTQ students: Phenomenographic exploration of high school administrators' perceptions about GSAs. *Journal of LGBT Youth, 13*(4), 352-377. <https://doi.org/10.1080/19361653.2016.1185759>
- Steinbach, P. (2006). Do the right thing: Athletic departments that have dominated the Directors' Cup have committed resources broadly, hired shrewdly and acted nobly. *Athletic Business, 30*(7), 44-55.
- Stokowski, S., Paule-Koba, A., Rudd, A., & Auerbach, A. (2020). Student-athlete development and winning success: An analysis of Directors' Cup standings. *Sports Innovation Journal, 1*, 36-48. <https://doi.org/10.18060/23755>
- Tan, J., & Wang, L. (2011). MNC strategic responses to ethical pressure: An institutional logic perspective. *Journal of Business Ethics, 98*(3), 373-390. <https://doi.org/10.1007/s10551-010-0553-7>
- Teece, D. J. (1976). *The multinational corporation and the resource cost of international technology transfer*. Ballinger Utterback.
- Thornton, P. H., & Ocasio, W. (2008). Institutional logics. In R. Greenwood, C. Oliver, K. Sahlin, & R. Suddaby (Eds.), *The Sage handbook of organizational institutionalism* (pp. 99-128). Sage Publications. <https://doi.org/10.4135/9781849200387.n4>
- Tsang, E. W., & Kwan, K. M. (1999). Replication and theory development in organizational science: A critical realist perspective. *Academy of Management Review, 24*(4), 759-780. <https://doi.org/10.5465/amr.1999.2553252>
- Turk, M. R., Stokowski, S. E., & Dittmore, S. W. (2019). "Don't be open or tell anyone": Inclusion of sexual minority college athletes. *Journal of Issues in Intercollegiate Athletics, 12*, 564-589.
- Waldron, J. (2016). It's complicated: Negotiations and complexities of being a lesbian in sport. *Sex Roles, 74*(7-8), 335-346. <https://doi.org/10.1007/s11199-015-0521-x>
- Walker, N. A., & Melton, E. N. (2015). The tipping point: The intersection of race, gender, and sexual orientation in intercollegiate sports. *Journal of Sport Management, 29*(3), 257-271. <https://doi.org/10.1123/jsm.2013-0079>
- Ward, R. E. (2015). Buried accomplishments: Institutional isomorphism in college athletics mission statements. *International Journal of Sport Communication, 8*(1), 18-45. <https://doi.org/10.1123/IJSC.2014-0018>
- Winter, S. G. (1995). Four Rs of profitability: Rents, resources, routines, and

replication. In C. A. Montgomery (Ed.), *Resource-based and evolutionary theories of the firm: Towards a synthesis* (pp. 147-178). Springer. https://doi.org/10.1007/978-1-4615-2201-0_7

Winter, S. G., & Szulanski, G. (2002). Replication of organizational routines. In C. W. Choo & N. Bontis (Eds.), *The strategic management of intellectual capital and organizational knowledge* (pp. 207-221). Oxford University Press.

Wolf-Wendel, L. E., Toma, J. D., & Morpew, C. C. (2001). There's no "I" in "team": Lessons from athletics on community building. *The Review of Higher Education*, 12(4), 369-396. <https://doi.org/10.1353/rhe.2001.0012>

Wood, E. A., Dittmore, S. W., Stokowski, S., & Li, B. (2019). Division I Athletic Director trends and perceptions of requisite professional skills. *Journal of Higher Education Athletics & Innovation*, 1(5), 102-122. <https://doi.org/10.15763/issn.2376-5267.2018.1.5.102-121>

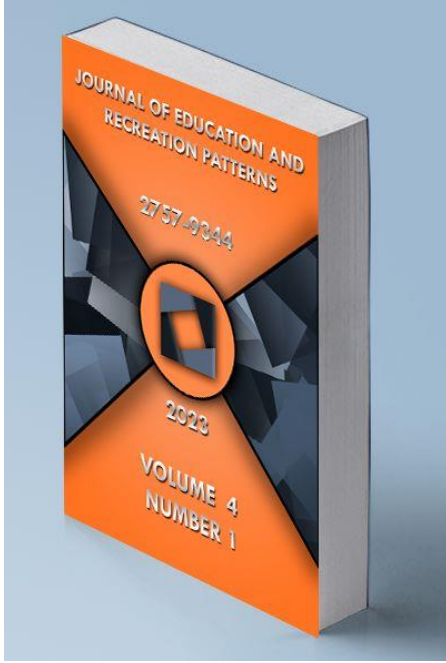
Copyright: © 2023 (Stokowski, S., Rudd, A., Corr, C., Jolly, K., & Fridley, A.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

The Effect of Deviced Respiratory Muscle Exercises Applied to Smokers and Non-Smokers on Respiratory Functions

Necdet Eray PİŞKİN¹, Zeynep KUTLU², Gönül YAVUZ³,
Zait Burak AKTUĞ⁴, Serkan İBİŞ⁵, Hasan AKA⁶

To cite this article:

Pişkin, N. E., Kutlu, Z., Yavuz, G., Aktuğ, Z. B., İbiş, S., & Aka, H. (2023). The Effect of Deviced Respiratory Muscle Exercises Applied to Smokers and Non-Smokers on Respiratory Functions. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 87-98. DOI: <https://doi.org/10.53016/jerp.v4i1.99>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Necdet Eray Pişkin, Niğde Gençlik ve Spor İl Müdürlüğü_n.eraypiskin@gmail.com, <https://orcid.org/0000-0001-7255-078X>

² Zeynep Kutlu, Niğde Ömer Halisdemir Üniversitesi, zeynepkntl@gmail.com, <https://orcid.org/0000-0003-0439-2462>

³ Gönül Yavuz, Kahramanmaraş Sütçü İmam Üniversitesi, gonulyavuuz@gmail.com, <https://orcid.org/0000-0003-0732-3200>

⁴ Zait Burak Aktuğ, Niğde Ömer Halisdemir Üniversitesi, zaitburak@gmail.com, <https://orcid.org/0000-0002-5102-4331>

⁵ Serkan İbiş, Niğde Ömer Halisdemir Üniversitesi, serkanibis@gmail.com, <https://orcid.org/0000-0002-5154-3086>

⁶ Hasan Aka, Niğde Ömer Halisdemir Üniversitesi, hasanaka06@gmail.com, <https://orcid.org/0000-0003-0603-9478>

The Effect of Deviced Respiratory Muscle Exercises Applied to Smokers and Non-Smokers on Respiratory Functions

Necdet Eray PİŞKİN¹, Zeynep KUTLU², Gönül YAVUZ³, Zait Burak AKTUĞ⁴, Serkan İBİŞ⁵, Hasan AKA⁶

ARTICLE INFORMATION

Original Research Paper

Received 07.02. 2023

Accepted 01.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 88-98

ABSTRACT

Cigarette addiction, which is very closely related to the onset of respiratory disorders, causes the deterioration of respiratory functions. It is possible to increase respiratory volume and capacity by strengthening the respiratory muscles through respiratory muscle exercises. In this study, it was aimed to compare the effects of 8-week deviced respiratory muscle exercises on the respiratory functions of smokers and non-smokers. A total of 22 volunteers, including 12 healthy and sedentary smokers and 10 non-smokers, participated in the study. All participants were given deviced respiratory muscle exercises every day for 8 weeks, with 40% of the maximal inspiratory pressure (MIP) values and 30 times in the morning and evening. The respiratory functions of the participants (FVC, FEV₁, PEF, and FEV₁/FVC) were determined by spirometry at the beginning of the study and at the end of the 8th week. The difference between the pretest and the posttest of respiratory functions was determined by the Wilcoxon signed rank test, and the comparison of the level of development between the groups was determined by the mixed ANOVA test. As a result of the study, it was determined that there was a statistically significant increase in favor of the posttest in both groups between the pretests and posttests of MIP, FVC, FEV₁, PEF, and FEV₁/FVC values. In addition, when the two groups were compared, it was determined that the improvement in FEV₁/FVC value was statistically higher in smokers. As a result, while it has been determined that deviced respiratory muscle exercises are an important factor in improving the respiratory functions of smokers and non-smokers, it can be recommended to use these exercises to increase the quality of life of individuals and to protect and improve their current health status.

Keywords: Lung Capacity, Respiratory Muscle Exercise, Sedentary, Smoking



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

Since the lungs, which are the main organs of the respiratory system, are passive at the point of movement, they can only move thanks to the respiratory muscles (Aung et al., 2019; Shin et al., 2017). The main respiratory mechanisms in the respiratory system are the diaphragm and the muscles between the ribs (Tu et al., 2013). The main task of this system is to maintain the oxygen level in arterial blood by the exchange of oxygen (O₂) and carbon dioxide (CO₂) gases (Braman, 1995). In order for the amount of inhaled O₂ to be more efficient, these muscles that help breathing must be strong (Santos et al., 2012). A deterioration in the respiratory muscles reduces the respiratory capacity and negatively affects daily work by preventing the transport of oxygen (De Troyer, 2012; McConnell, 2013; Tiller et al., 2019). For this reason, respiratory capacities both affect the quality of life and are accepted as an important indicator of physical fitness (Schunemann et al., 2000; Verges, et al., 2009).

Cigarette addiction, which is very closely related to the onset of respiratory disorders, causes deterioration of respiratory functions (Kim et al., 2012). In addition, according to the World Health Organization, smoking addiction increases the risk of lung diseases and plays a role in the development of many diseases (WHO, 2011). Cigarette addiction, which threatens health, doubles O₂ consumption during movement. The red blood cells of smokers undergo 10% degeneration and cause a decrease in the amount of oxygen taken into the lungs. This causes lactic acid to accumulate more quickly in the blood, causing smokers to get tired more quickly. As a result, the heart has to carry more blood to the tissues and increases blood pressure (John, 1993; McMurray et al., 1985). Regardless of whether active or passive, smoking causes important problems such as stiffness in the veins, decrease in ventilation of alveoli, deterioration in diffusion capacity, increase in airway resistance and decrease in oxygen carrying capacity of blood. In addition, smoking-related cardiovascular problems and respiratory system problems cause a decrease in the muscle strength of individuals. While all these problems prevent individuals from doing their daily work, they also reduce their physical activity levels and reduce their quality of life (Rallidis & Anastasiou-Nana, 2011; McConnell, 2011; Ünver, 2022).

The decrease in respiratory functions can be eliminated with respiratory muscle exercises aimed at improving the respiratory muscles. Respiratory muscle exercises used in respiratory rehabilitation are based on reducing shortness of breath by increasing respiratory functions (Culver et al., 2017). The most commonly used methods in respiratory muscle exercises are stated as diaphragmatic (abdominal breathing) respiratory muscle exercise, pursed lip respiratory muscle exercise and deviced respiratory muscle exercise (Aktuğ et al., 2022a; Aktuğ et al., 2022b; Sukatan et al., 2022). While respiratory muscle exercises that contribute to the development of respiratory functions improve respiratory strength, this also increases healthy quality of life and physical fitness (Özdal & Bostancı, 2018; Özdal et al., 2016; HajGhanbari et al., 2013; Illi et al., 2012).

Respiratory muscles are structurally and functionally similar to skeletal muscles and therefore respond to the applied exercise load like skeletal muscles (Kraemer et al., 2002). The improvement in the strength of the diaphragm, which is the most important of the respiratory muscles, affects the respiratory functions positively (Weiner et al., 2003). Exercises to develop respiratory muscles were initially used for treatment in people suffering from asthma, chronic obstructive pulmonary disease (COPD) and airflow limitation (Beckerman et al., 2005; Weiner et al., 2004). Recently, it has been seen that it has been used to increase sportive performance and quality of life in sedentary and athletic individuals (McCarthy et al., 2015; Bostancı et al., 2019). In addition, there are studies that determine that respiratory muscle exercises improve respiratory functions in smokers (Roh et al., 2012; Kim & Lee, 2012; Bostancı et al., 2019). In

a study conducted on this subject, 34 healthy individuals who smoke and do not smoke were given respiratory muscle exercise 3 times a week for 6 weeks, and it was determined that the FVC values of the smoking group increased as a result of the study (Roh et al., 2012). In another study, participants who were divided into two groups as smokers and non-smokers were given deviced respiratory muscle exercise every day of the week for 4 weeks. As a result, it was determined that the respiratory functions and respiratory muscle strength of smokers improved significantly (Bostanci et al., 2019).

In the light of this information, the aim of the study is to compare the effects of deviced respiratory muscle exercises applied for 8 weeks on the respiratory functions of smokers and non-smokers. The hypothesis of the study is that respiratory muscle exercises applied to smokers provide a higher improvement in respiratory functions than non-smokers.

METHOD

Ethics Committee Approval

For the research, ethics committee approval was obtained with the decision number E-95860085-050.02.04-329736 and dated 2022 from Niğde Ömer Halisdemir University Non-Interventional Clinical Research Ethics Committee. This study was conducted in accordance with the Principles of the Declaration of Helsinki.

Research Design

In this study, since it was aimed to determine whether the respiratory muscle exercises applied for 8 weeks were effective on respiratory functions in smokers and non-smokers, it was carried out according to the pretest-posttest design with control experimental group from quantitative research designs

Research Group

The population of the study consists of people between the ages of 30-45, who do not have any acute or chronic pulmonary and cardiovascular disease, and who have undergone health check-ups. The sample, on the other hand, consisted of 22 people selected from this population, including smokers (n:12) and non-smokers (n:10). For this reason, the sample was determined according to the simple random sampling method, which is one of the probability-based sampling methods.

Table 1. Demographic Information of the Participants

	Smokers	Non Smokers
Age (years)	38.42±8.56	33.10±6.70
Height (cm)	173.42±8.61	162.80±6.42
Body weight (kg)	78.25±14.94	67.40±19.60
Cigarette count (per day)	18.25±11.06	

Experimental Procedure

Participants were divided into two groups, smokers and non-smokers. Firstly, pulmonary function tests were performed by spirometry and then MIP measurements were made in both groups. The pressure ranges that the participants used in deviced respiratory muscle exercises were calculated according to the MIP measurement results, and the pressures that were different for each of the participants were adjusted to the respiratory muscle exercise equipment according to these values. Participants in both groups practiced deviced respiratory muscle exercise every day of the week for 8 weeks. Both pulmonary function tests and MIP measurements were repeated twice, at the beginning of the study and after 8 weeks of exercises, while the participant was at rest for at least 5 minutes. Both initial and post-test measurements were made at the same time of day, under the same physical conditions and in the same order. In the measurements, each participant was given a special bacterial filter mouthpiece.

Applied Tests and Exercises

Deviced Respiratory Muscle Exercise

Participants performed the respiratory muscle exercises with the plus (blue) model of the powerbreathe brand (Powerbreathe Plus, UK) respiratory muscle exerciser, which has a load adjustment range of 23-196 cmH₂O and whose pressure can be adjusted mechanically. Respiratory muscle exercises were applied twice, 30 times in the morning and 30 in the evening, every day of the week for 8 weeks and lasted approximately 8-10 minutes. All participants were shown the deviced respiratory muscle exercise, and after it was seen that the participants did the exercise correctly, the study began.

Maximal Inspiratory Pressure (MIP) Measurement and Pulmonary Function Test

Before starting the deviced respiratory muscle exercise, the participants' age, height, weight and gender information were entered into the K5 respiratory exercise machine (Powerbreathe inspiratory muscle trainer, Ironman K5, HaB Ltd., UK). and 30 ventilations were performed with this deviced. This measurement was applied twice and the best value was recorded in cmH₂O and included in the study. Personalized exercise load was adjusted with 40% of the MIP determined in deviced respiratory muscle exercises and applied with the powerbreathe deviced.

Pulmonary Function Test

The respiratory functions of the participants were measured with the MIR brand Spirolab Model spirometer deviced. Forced vital capacity (FVC-lt), forced expiratory volume in the first second (FEV₁-lt), peak expiratory flow rate (PEF-lt/sec), and FEV₁/FVC% were taken from the participants. In order to obtain accurate results during the measurements, respiratory functions were applied in a comfortable sitting position by attaching clips to the nose parts.

Statistical Analysis

SPSS 24 program was used in the analysis of the data. The difference between the pretest and posttest of respiratory functions was determined by Wilcoxon Signed Ranks Test. The effects of respiratory exercises on the dependent variable from each test point were tested with the mixed ANOVA test. The effect size was analyzed according to Cohen's d. The effect size of Cohen's d was classified as 0-0.2 insignificant effects, 0.2-0.5 minor effects, 0.5-0.8 medium effects, and >0.8 major effects. In the study, the level of significance was accepted as p<0.05.

FINDINGS

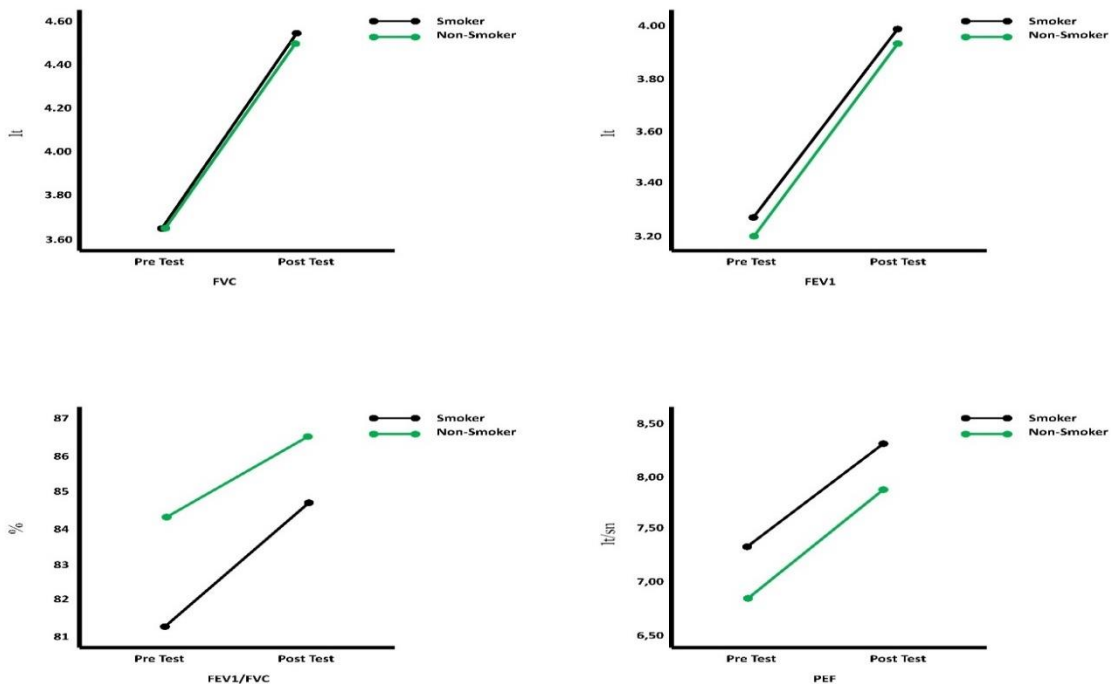
Table 2 compares the effects of 8-week respiratory muscle exercises on respiratory functions in smokers and non-smokers. In addition, it was examined in which group respiratory muscle exercises provided a higher improvement in respiratory functions.

Table 2. Comparison of Respiratory Functions within and between Groups

		Smokers			Non Smokers			Mixed Anova
		$\bar{X}\pm Sd$	p	Cohen's d	$\bar{X}\pm Sd$	p	Cohen's d	
MIP (cmH ₂ O)	Pre-test	77.12±22.03	0.002	0.64	62.79±14.01	0.005	1.24	0.778
	Post-test	91.18±21.47			78.00±10.03			
FVC (lt)	Pre-test	3.64±0.57	0.002	1.56	3.63±0.43	0.005	2.26	0.729
	Post-test	4.54±0.58			4.50±0.33			
FEV ₁ (lt/sn)	Pre-test	3.27±0.60	0.002	1.25	3.20±0.30	0.005	2.81	0.913
	Post-test	3.99±0.55			3.94±0.22			
FEV ₁ /FVC (%)	Pre-test	81.26±1.88	0.002	1.78	84.28±1.57	0.005	1.42	0.040
	Post-test	84.75±2.03			86.56±1.63			
PEF (lt/sn)	Pre-test	7.33±0.75	0.002	1.13	6.83±0.62	0.005	1.85	0.541
	Post-test	8.28±0.92			7.86±0.48			

*p<0,05

When Table 2 is examined, it was determined that there was a statistically significant increase in favor of the posttest in both groups between the pretests and posttests of MIP, FVC, FEV₁, PEF, FEV₁/FVC values. When the two groups were compared, it was determined that the improvement in FEV₁/FVC value in smokers was significantly higher. In addition, it was determined that respiratory muscle exercise had a great effect on respiratory parameters in both groups according to Cohen's d, and this effect was higher in non-smokers.



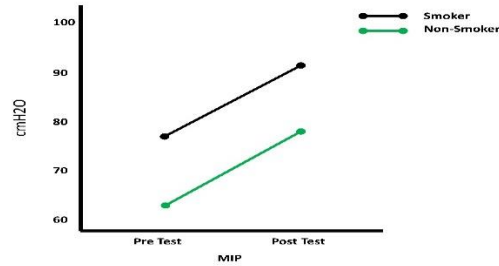


Figure 1. Comparison of Respiratory Functions between Groups

DISCUSSION

Smoking reduces the ability of the lungs to work and this is due to various substances found in cigarette smoke (Dalack et al., 1993). Carbon monoxide (CO), one of these substances, is 200 times more interested in hemoglobin than oxygen. Thus, CO reduces the oxygen carrying capacity of hemoglobin and decreases the oxygen concentration reaching the tissues (Krupski, 1991). Smoking reduces cardiopulmonary function (Baydur et al., 2001), reduces respiratory functions and lung function (Guyton, 1986). For this reason, the most important harmful effects of smoking are cardiopulmonary, asthma and neuromuscular diseases (Santos, 2012). Mustafaoglu et al. (2022) included 54 smokers, 65 non-smokers, and 183 substance abusers in a study and evaluated the respiratory functions, respiratory muscle strength and functional capacities of the participants. As a result of the study, it was determined that the parameters of FVC, FEV1, FEV1/FVC, PEF and FEF25-75 were lower in smokers compared to non-smokers. In addition, MIP and maximal expiratory pressure (MEP) values, which show respiratory muscle strength, were found to be lower in smokers than in non-smokers (Mustafaoglu et al., 2022).

It is known that respiratory muscle exercises have a positive effect in improving respiratory muscle strength and respiratory functions (Weiner et al., 1999). Like skeletal muscles, the strength and endurance of respiratory muscles can be increased (Parady, Reid & Belman, 1988). Respiratory muscle exercises are an exercise method that applies a significant load to the inspiratory muscles and strengthens the respiratory muscles (Silva et al., 2013). Due to the strength-increasing effect of respiratory muscle exercises on the inspiratory muscle, they reduce the perception of dyspnea as a result of the decrease in inspiratory muscle strength in individuals with cardiopulmonary disease and provides an increase in exercise capacity (Hill et al., 2010). When the literature is examined, it is seen that there is a lot of research on the harmful effects of smoking on lung functions in sick individuals, while studies on how respiratory muscle exercise can improve lung functions in normal smokers are limited (Lee et al., 2011; Kim & Lee, 2012). The aim of this study, which was carried out with these considerations, is to compare the effects of devised respiratory muscle exercises applied for 8 weeks on the respiratory functions of smokers and non-smokers. As a result of our study, it was determined that there was a significant increase in favor of the posttest in both groups between the pretests and posttests of MIP, FVC, FEV1, PEF, FEV1/FVC values (table2). According to these results, the most striking finding was that the improvement in FEV1/FVC value in smokers was significantly higher when the two groups were compared. The close relationship between smoking and respiratory dysfunction is widely accepted in studies (Roh et al., 2012). Respiratory muscle exercises are known to provide benefits to reduce respiratory dysfunction. In a similar study conducted for this purpose, it was aimed to compare the effects of respiratory muscle exercises on PEF and respiratory muscle strength in smokers and non-

smokers. Respiratory muscle exercise was applied to the participants twice a week for 5 weeks, and as a result, it was determined that both groups' PEF and respiratory muscle strength increased (Lee et al., 2011). Another study examined whether 8 weeks of balloon blowing exercise improved lung function in 30 young healthy smokers. As a result of the study, it was stated that balloon blowing exercise significantly improved VC, ERV, IRV, FVC, FEV₁, FEV₁/FVC, PEF parameters (Kim & Lee, 2012). On the other hand, Bostanci et al. (2019) examined the effects of 4-week respiratory muscle exercises on respiratory function and respiratory muscle strength in both healthy smokers and non-smokers. As a result of the study, it was determined that MIP, MEP, FEV₁, FVC, FEV₁/FVC%, MVV, SVC and IC respiratory functions improved in smokers. On the other hand, Bostanci et al. (2019) argued that the increased lung volumes as a result of the study were due to the strong neck muscle and the relationship between the upper thorax and the inspiratory muscle (Tenório et al., 2013). Therefore, it was thought that the improvement in respiratory functions was related to the increase in inspiratory muscle strength (Bostanci et al., 2019).

Since the effects of smoking on the respiratory tract occur in a long time and in direct proportion to the pack-year, young or low-intensity smokers can have asymptomatic and normal respiratory function values. As a matter of fact, there are studies reporting that early changes in small airways cannot be detected by respiratory function and that different methods should be used (Ceylan et al., 2006; Lee et al., 2000). In one study, the FVC, FEV₁, FEV₁/FVC, PEF and FEF₂₅₋₇₅ values obtained in asymptomatic smokers did not differ significantly compared to non-smokers, but the lung carbon monoxide diffusing capacity (DLCO) and alveolar volume-corrected DLCO (DLCO/VA) values were significantly lower. (Ceylan et al., 2006). Tanaka et al. (2003) reported that the prevalence of asymptomatic people with normal pulmonary function values is high among smokers and that they can be detected by evaluating the widths of air-entrained areas on computed tomography images (Tanaka et al., 2003).

CONCLUSION

In our study, it was determined that 8 weeks of deviced respiratory muscle exercise significantly improved respiratory muscle strength and respiratory functions in both smokers and non-smokers. Considering that the deterioration in respiratory functions of smokers over time is higher than non-smokers, it is recommended that especially smokers should practice respiratory muscle exercises to protect their respiratory functions and strength of respiratory muscles. Additionally, could suggest that respiratory muscle exercises should be included in smoking cessation programs to prevent respiratory dysfunction.

Limitations of the Research

Since this study investigated the effect of deviced respiratory muscle exercises in smokers and nonsmokers, the control group was not included in the study. At the same time, FVC, FEV₁, FEV₁/FVC and PEF were examined in respiratory function parameters and other parameters (MVV, IC, VC, FEF₂₅₋₇₅ etc.)

Acknowledgements or Notes

There is no financial support and conflict of interest in this study. The authors would like to thank 22 participating volunteers for their cooperation and willingness to respond to this research. Also, the authors would like to thank the anonymous reviewers and editors for their comprehensive and constructive feedback that guided us to improve the manuscript.

REFERENCES

- Aktuğ, Z. B., Kurt, S., Pişkin, E. P., Yavuz, G., & İbiş, S. (2022a). Effect of inspiratory muscle training with the device on respiratory. *Mediterranean Journal of Sport Science*, 5(3), 571-581. <https://doi.org/10.38021/asbid.1153587>
- Aktuğ, Z. B., Yavuz, G., Pişkin, N. E., Aka, H., & İbiş, S. (2022b). Acute effect of different respiratory muscle exercises on maximal oxygen consumption and lung functions. *Turkish Journal of Sports Medicine*. 57(2), 79-85. <https://doi.org/10.47447/tjism.0632>
- Aung, H. H., Sivakumar, A., Gholami, S. K., Venkateswaran, S. P., & Gorain, B. (2019). An overview of the anatomy and physiology of the lung. *Nanotechnology-Based Targeted Drug Delivery Systems for Lung Cancer*, 1-20. <https://doi.org/10.1016/B978-0-12-815720-6.00001-0>
- Baydur, A., Adkins, R. H., & Milic-Emili, J. (2001). Lung mechanics in individuals with spinal cord injury: effects of injury level and posture. *Journal of Applied Physiology*, 90(2), 405-411. <https://doi.org/10.1152/jappl.2001.90.2.405>
- Beckerman, M., Magadle, R., Weiner, M., & Weiner, P. (2005). The effects of 1 year of specific inspiratory muscle training in patients with COPD. *Chest*, 128(5), 3177-3182. <https://doi.org/10.1378/chest.128.5.3177>
- Bostancı, Ö., Mayda, H., Yılmaz, C., Kabadayı, M., Yılmaz, A. K., & Özdal, M. (2019). Inspiratory muscle training improves pulmonary functions and respiratory muscle strength in healthy male smokers. *Respiratory Physiology & Neurobiology*, 264, 28-32. <https://doi.org/10.1016/j.resp.2019.04.001>
- Braman, S. S. (1995). The regulation of normal lung function. In *Allergy and Asthma Proceedings, Ocean Side Publications*. 16(5), 225-6. <https://doi.org/10.2500/108854195778702602>
- Ceylan, E., Gencer, M., Turan, M. N., & Bayat, A. (2006). The effect of cigarette smoking on pulmonary diffusing capacity in asymptomatic smokers. *Solunum*, 8(1), 23-26.
- Culver, B. H., Graham, B. L., Coates, A. L., Wanger, J., Berry, C. E., Clarke, P. K., Hallstrand, T. S., Hankinson, J. L., Kaminsky, D. A., MacIntyre, N. R., McCormack, M. C., Rosenfeld, M. S., & Weiner, D. J. (2017). Recommendations for a standardized pulmonary function report. An official American Thoracic Society technical statement. *American Journal of Respiratory and Critical Care Medicine*, 196(11), 1463-1472. <https://doi.org/10.1164/rccm.201710-1981ST>
- Dalack, G. W., Glasman, A., & Covey, L. S. (1993). Nicotine use in current psychiatric therapy. *Dunner DL*.
- De Troyer, A. (2012). Respiratory effect of the lower rib displacement produced by the diaphragm. *Journal of Applied Physiology*, 112(4), 529-534. <https://doi.org/10.1152/jappphysiol.01067.2011>
- Guyton, A. C., & Hall, J. E. (1986). *Textbook of medical physiology*. Philadelphia: Saunders.
- HajGhanbari, B., Yamabayashi, C., Buna, T. R., Coelho, J. D., Freedman, K. D., Morton, T. A., Palmer, S. A., Toy, M. A., Walsh, C., Sheel, A. W., & Reid, W. D. (2013). Effects of respiratory muscle training on performance in athletes: a systematic review with meta-analyses. *The Journal of Strength & Conditioning Research*, 27(6), 1643-1663. <https://doi.org/10.1519/JSC.0b013e318269f73f>
- Hill, K., Cecins, N. M., Eastwood, P. R., & Jenkins, S. C. (2010). Inspiratory muscle training for patients with chronic obstructive pulmonary disease: a practical guide for clinicians. *Archives of Physical Medicine and Rehabilitation*, 91(9), 1466-1470. <https://doi.org/10.1016/j.apmr.2010.06.010>
- Illi, S. K., Held, U., Frank, I., & Spengler, C. M. (2012). Effect of respiratory muscle training on exercise performance in healthy individuals. *Sports Medicine*, 42(8), 707-724. <https://doi.org/10.1007/BF03262290>

- John, W. H. (1993). Human Anatomy Physiology. Sixth Edition. *William C. Brown Publishers*, 637-643.
- Kim, J. S., & Lee, Y. S. (2012). Effects of a balloon-blowing exercise on lung function of young adult smokers. *Journal of Physical Therapy Science*, 24(6), 531-534. <https://doi.org/10.1589/jpts.24.531>
- Kraemer, W. J., Adams, K., Cafarelli, E., Dudley, G. A., Dooly, C., Feigenbaum, M. S., Fleck, S. J., Franklin, B., Fry, A. C., Hoffman, J. R., Newton, R. U., Pottenger, J., Stone, M. H., Ratamess, N. A., Triplett-McBride, T. (2002). American College of Sports Medicine Position Stand. Progression Models in Resistance Training For Healthy Adults. *Medicine and Science in Sports and Exercise*, 34(2), 364-380. <https://doi.org/10.1249/MSS.0b013e3181915670>
- Krupski, W. C. (1991). The peripheral vascular consequences of smoking. *Annals of Vascular Surgery*, 5(3), 291-304. <https://doi.org/10.1007/BF02329389>
- Lee, K. W., Chung, S. Y., Yang, I., Lee, Y., Ko, E. Y., & Park, M. J. (2000). Correlation of aging and smoking with air trapping at thin-section CT of the lung in asymptomatic subjects. *Radiology*, 214(3), 831-836. <https://doi.org/10.1148/radiology.214.3.r00mr05831>
- Lee, S. C., Jung, C. H., Lee, E. S., Lee, H. H., Joung, Y. H., Chae, H. J., Choi, J. A., Chul, L. H., Oh, S. B., & Son, K. H. (2011). Changes of respiratory ability according to respiratory muscle exercises for smokers and non-smokers in their twenties. *Journal of Korean Physical Therapy Science*, 18(3), 9-16.
- McCarthy, B., Casey, D., Devane, D., Murphy, K., Murphy, E., & Lacasse, Y. (2015). Pulmonary rehabilitation for chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews*, 23(2), CD003793. <https://doi.org/10.1002/14651858.CD003793.pub3>
- McConnell, A. (2011). Breathe strong, perform better. Human Kinetics.
- McConnell, A. K. (2013). Respiratory Muscle Training: Theory and Practice. Elsevier Health Sciences, London: Uk. <https://doi.org/10.1016/B978-0-7020-5020-6.09996-9>
- McMurray, R. G, Hicks, L. L, Thompson, D. L. (1985). The effects of passive inhalation of cigarette smoke on exercise performance. *European Journal of Applied Physiology and Occupational Physiology*, 54, 196-200. <https://doi.org/10.1007/BF02335929>
- Mustafaoglu, R., Dilektasli, A. G., Demir, R., Zirek, E., Birinci, T., Mutlu, E. K., Evren, C., & Ozdincler, A. R. (2022). Exercise capacity, lung and respiratory muscle function in substance use disorders. *Pulmonology*. 31;S2531-0437(22)00006-X <https://doi.org/10.1016/j.pulmoe.2021.12.009>
- Özdal, M., & Bostancı, Ö. (2018). Influence of inspiratory muscle warm-up on aerobic performance during incremental exercise. *Isokinetic and Exercise Science*, 26(3), 167-173. <https://doi.org/10.3233/IES-172188>
- Özdal, M., Bostancı, Ö., Dağlıoğlu, Ö., Ağaoğlu, S. A., & Kabadayı, M. (2016). Effect of respiratory warm-up on anaerobic power. *The Journal of Physical Therapy Science*, 28(7), 2097-2098. <https://doi.org/10.1589/jpts.28.2097>
- Pardy, R. L., & Reid, W. D., & Belman, M. J. (1988). Respiratory muscle training. *Clinics in Chest Medicine*. 9(2), 287-296. [https://doi.org/10.1016/S0272-5231\(21\)00505-0](https://doi.org/10.1016/S0272-5231(21)00505-0)
- Rallidis, L. S., & Anastasiou-Nana, M. I. (2011). Current concerns and difficulties in the prevention of cardiovascular diseases. *Hellenic Journal of Cardiology*, 52, 437-441. <https://doi.org/10.1016/j.amjmed.2010.08.015>
- Roh, H., Lee, D., Lee, S., & Park, J. (2012). Respiratory muscle training of pulmonary function for smokers and non-smokers. *Journal of Physical Therapy Science*, 24(8), 691-693. <https://doi.org/10.1589/jpts.24.691>
- Santos, M. L. D. M. D., Rosa, B. D., Ferreira, C. D. R., Medeiros, A. D. A., & Batiston, A. P. (2012). Maximal respiratory pressures in healthy boys who practice swimming or

- indoor soccer and in healthy sedentary boys. *Physiotherapy Theory and Practice*, 28(1), 26-31. <https://doi.org/10.3109/09593985.2011.560239>
- Schunemann, H. J., Dorn, J., Grant, B. J. W., Winkelstein, J. R., & Trevisan, M. (2000). Pulmonary function is a long-term predictor of mortality in the general population: 29 year follow-up of the Buffalo Health Study. *Chest*, 118(3), 656-664. <https://doi.org/10.1378/chest.118.3.656>
- Shin, Y. S., Yang, S. M., Kim, J. H., Lee, J. U., Kim, M. Y., Lee, L. K., & Kwak, T. Y. (2017). Respiratory function of the Korean elite judo athletes and non-athletes. *Archives of Budo*, 13, 297-307.
- Silva, I. S., Fregonezi, G. A., Dias, F. A., Ribeiro, C. T., Guerra, R. O., & Ferreira, G. M. (2013). Inspiratory muscle training for asthma. *Cochrane Database Systematic Review*, 9, 1-35. <https://doi.org/10.1002/14651858.CD003792.pub2>
- Sukatan, Z., Aktuğ, Z. B., İbiş, S., Yavuz, G., & Pişkin, N. E. (2022). Acute Effect of Different Respiratory Muscle Warm-Up on Respiratory Parameters. *Journal of Human Sciences*, 19(4), 550-560. <https://doi.org/10.14687/jhs.v19i4.6318>
- Tanaka, N., Matsumoto, T., Miura, G., Emoto, T., Matsunaga, N., Ueda, K., & Lynch, D. A. (2003). Air trapping at CT: high prevalence in asymptomatic subjects with normal pulmonary function. *Radiology*, 227(3), 776-785. <https://doi.org/10.1148/radiol.2273020352>
- Tenório, L. H. S., Santos, A. C., Câmara Neto, J. B., Amaral, F. J., Passos, V. M. M., Lima, A. M. J., & Brasileiro-Santos, M. D. S. (2013). The influence of inspiratory muscle training on diaphragmatic mobility, pulmonary function and maximum respiratory pressures in morbidly obese individuals: a pilot study. *Disability and Rehabilitation*, 35(22), 1915-1920. <https://doi.org/10.3109/09638288.2013.769635>
- Tiller, N. B., Turner, L. A., & Taylor, B. J. (2019). Pulmonary and respiratory muscle function in response to 10 marathons in 10 days. *European Journal of Applied Physiology*, 119(2), 509-518. <https://doi.org/10.1007/s00421-018-4037-2>
- Tu, J., Inthavong, K., & Ahmadi, G. (2013). Computational fluid and particle dynamics in the human respiratory system. Dordrecht: Springer Netherlands. <https://doi.org/10.1007/978-94-007-4488-2>
- Ünver, R. (2022). A study on the effects of university students' motivation to participate in physical activity on quality of life: the case of Kırıkkale University. *Journal of Education and Recreation Patterns*, 3(2), 90-99. <https://doi.org/10.53016/jerp.v3i2.59>
- Verges, S., Flore, P., Nantermoz, G., Lafaix, P. A., & Wuyam, B. (2009). Respiratory muscle training in athletes with spinal cord injury. *International Journal of Sports Medicine*, 30(7), 526-532. <https://doi.org/10.1055/s-0029-1202336>
- Weiner, P., Magadle, R., Beckerman, M., Weiner, M., & Berar-Yanay, N. (2003). Comparison of specific expiratory, inspiratory, and combined muscle training programs in COPD. *Chest*, 124(4), 1357-1364. <https://doi.org/10.1378/chest.124.4.1357>
- Weiner, P., Magadle, R., Beckerman, M., Weiner, M., & Berar-Yanay, N. (2004). Maintenance of inspiratory muscle training in COPD patients: one year follow-up. *European Respiratory Journal*, 23(1), 61-65. <https://doi.org/10.1183/09031936.03.00059503>
- Weiner, P., Magadle, R., Berar-Yanay, N., & Pelled, B. (1999). The effect of specific inspiratory muscle training on the sensation of dyspnea and exercise tolerance in patients with congestive heart failure. *Clinical Cardiology*, 22(11), 727-732. <https://doi.org/10.1002/clc.4960221110>
- WHO Report on the Global Tobacco Epidemic (2011). Warning about the dangers of tobacco. http://www.who.int/tobacco/global_report/2011/en/.

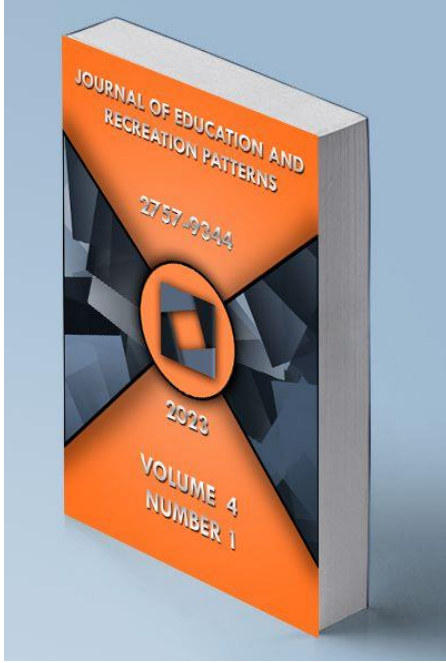
Copyright: © 2023 (Pişkin, N. E., Kutlu, Z., Yavuz, G., Aktuğ, Z. B., İbiş, S., & Aka, H.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

The Relationship of Dorsiflexion Angle with Leg Volume, Balance, Speed, and Change of Direction Performance in Amateur Soccer Players

Veysi CİRASUN¹, Barış BAYDEMİR²

To cite this article:

Cirasun, V. & Baydemir, B. (2023). The Relationship of Dorsiflexion Angle with Leg Volume, Balance, Speed, and Change of Direction Performance in Amateur Soccer Players. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 99-115. DOI: <https://doi.org/10.53016/jerp.v4i1.83>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹Veysi CİRASUN, Çanakkale Onsekiz Mart University, Faculty of Sports Sciences, veysicirasun73@gmail.com,

<https://orcid.org/0000-0002-1355-1691>

²Barış BAYDEMİR, Çanakkale Onsekiz Mart University, Faculty of Sports Sciences,

barisbaydemir@hotmail.com, <https://orcid.org/0000-0002-8653-06648>

*This study is derived from a master's thesis prepared by the first author under the supervision of the second author.

The Relationship of Dorsiflexion Angle with Leg Volume, Balance, Speed, and Change of Direction Performance in Amateur Soccer Players

Veysi CİRASUN¹, Barış BAYDEMİR²

ARTICLE INFORMATION

Original Research Paper

Received 10.12. 2022

Accepted 31.05. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 99-115

ABSTRACT

The aim of this study is to examine the relationship between dorsiflexion angles, leg volume, dynamic balance, speed performance, and change of direction performances depending on agility in athletes aged 14–15 who were raised in the infrastructure of various sports clubs and exposed to various training loads during the basic training period. 76 male football players who play football in the amateur league participated in our research at the Cizre Hamit Özalp Stadium, which is under the Cizre Youth and Sports District Services Directorate. Height, weight, body mass index, leg volume, 30 meter speed, Y-balance test, and Illinois test were applied to the performance of changing the direction of the athletes participating in the research. The SPSS package program was used for the analysis of the data obtained in the research. The Kolmogorov-Smirnov test was performed to determine whether the data obtained in the study showed a normal distribution. Spearman Rank Differences the correlation test, which is one of the non-parametric tests, was used to reveal whether there is a relationship between the right and left region measurement values of the athletes participating in the research. In the research findings, the relationship among dorsiflexion and muscle volume ($r=0.301$, $p<0.01$), ($r=0.427$, $p<0.01$), dorsiflexion and dynamic balance anterior ($r=0.497$, $p<0.01$), posterolateral ($r=0.331$), $p<0.01$), posteromedial ($r=0.324$, $p<0.01$), muscle volume and dynamic balance anterior ($r=0.390$, $p<0.01$), posteromedial ($r=0.305$, $p<0.01$), posteromedial ($r=0.365$, $p<0.01$) and balance anterior ($r=-0.493$, $p<0.01$), posterolateral ($r=-0.382$, $p<0.01$), posteromedial and deflection ($r=-0.336$, $p<0.01$) performances were examined. As a result of the research, it has been determined that the muscle volume of the athletes with good dorsiflexion angles is also good, the dynamic balance performance of the athletes with good dorsiflexion angles is also good, the dynamic balance performance of the athletes with good calf volumes is also good, and the direction change performance of the athletes with good speed performance is also good.

Keywords: Change of Direction, Dorsiflexion, Football, Range of Motion, Speed



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

Football is among the most popular sports branches in the world. For this reason, the interest in football continues to increase on all platforms. The number of football players in the world is considered to be in the millions. Football is an extremely powerful source of prestige both nationally and internationally. As well as these, although the football branch is not easy, it requires being very strong both psychologically and physically.

Football can be defined as a long-term game based on contact, in which all physical and physiological parameters are involved. The reason for this is that in addition to basic motoric features such as speed, strength and endurance, it contains complex movement patterns consisting of all components of force and high-speed changes of direction. However, it reveals the necessity of a good aerobic and anaerobic capacity based on the contraction principles required by muscular strength and endurance. Considering all these features, it is separated from many types of sports. Researchers state that football has an important place in people's lives (Bozkır and Demir, 2022).

Maintaining dynamic balance in athletes depends on the smooth functioning of the postural control system, which protects the pressure center within the body's support area. The balance control process has been an important part of the sport, as various exercise intensities have to be adapted to the prevailing conditions on the field and to various team tactics in combat and sport from the past to the present. Researchers have stated that achieving a high level of skill in sports as an adult athlete depends on the correct development of motor skills at a young age (Sikoro et al., 2020).

Postural balance is defined as the ability of the body to remain stable in positions for static and dynamic balance. In addition, dynamic balance is extremely important for daily life and exercise. Postural balance is a complex process that depends on the interpretation of external stimuli received by sensory information mechanisms, including the visual, vestibular, and proprioceptive systems, which are responsible for bringing information via nerve conduction to the somatosensory cortex. The Y-Balance Test is a functional balance measurement tool for the lower extremity derived from the Star Balance Test. The test is inexpensive to administer and quick and simple to administer. It can be used to assess the dynamic balance of the lower extremity, identify athletes at risk of injury, monitor rehabilitation progress, and perform neuromuscular training. In addition, it can be used in young runners, patients with ankle sprains, and athletes with anterior cruciate ligament injuries (Almeida et al., 2017).

Movement asymmetry has been recognized as a risk factor for initial and recurrent musculoskeletal injuries for individuals. Unfortunately, there is very little information about motion asymmetry in competitive sports. Therefore, the identification and correction of motion asymmetry have been a major concern for sports scientists and scientists in recent years (Cug et al., 2020).

It is known that lower extremity injuries are common in branches such as football, where bilateral struggle and contact are high. It has been stated that especially the decreased ankle dorsiflexion angles in athletes increase the tension of the tendons in the soleus and gastrocnemius muscles. In the analysis of walking and running, it is stated that the soleus and gastrocnemius muscles absorb the mechanical force before the big toe is lifted, and as a result, the force absorbed by both soleus and gastrocnemius increases if the ankle dorsiflexion angle is limited. In this case, it may increase the risk of injury in the ankle. It is stated that decreasing ankle dorsiflexion angle increases Achilles tendinopathy 2.5-3.6 times (Lagas et al., 2021).

An important feature for athletes is change of direction performance and studies continue on this subject (Baydemir ve Aksoy, 2019). Changing direction performance is also defined as a complex ability that requires power such as maximum power, and reactive power, in which appropriate technique, speed, anthropometric factors, and leg muscle characteristics are at the forefront. Changing direction is defined as an athlete's rapid deceleration from one direction to a new direction and rapid acceleration again. It is known that football is a sports branch with a lot of changes in direction as of gameplay. It is stated that the ability to change direction is extremely important for the performance of the athlete in the match (Kerdaoui et al., 2021).

Another important feature for athletes is speed. Speed, which is one of the basic motoric features, is known to be one of the important motoric features that are at the forefront in football, as in most sports. Sprint training is generally done such as maximal speed, continuity in speed, straight sprint, and acceleration in a straight sprint. Other important parameters in speed, such as maximal speed, acceleration, and agility, have similar biochemical and morphological features such as muscle type, and there are studies supporting that speed and agility performance are interrelated (Vurmaz, 2018).

Overloading in training is about providing optimum stimulation in order to provide physical and physiological adaptation to reveal the desired athlete performance. Overload is exercise and training that goes beyond the normal training performance level. For a workout to be considered overloaded, the intensity, frequency, and duration of the workout must exceed the normal level of physical performance. The intensity of a workout is related to the rate of work done in that workout and the rate of energy burned. The total training volume or scope is related to how much work is done in that unit of training (Stone et al., 2000).

The training should be in accordance with the performance of the athlete in the competition. In order to maximize the performance of the athlete in training, the recommended points to be applied in the training method selections are specified. It is stated that the emphasized regions of force production are the direction of the movement, the dynamics of effort (related to the movement being static and dynamic), the maximum force production rate and duration, and the working regime of the muscle (concentric and eccentric muscle movement) (Stone et al., 2000).

The specificity of the training while doing sports is accepted as an important factor in shaping the training effects. There are two important factors in the personalization of the training. The first of these is the response to the acute effect of the training, while the other is the extent to which the training is similar to the conditions exposed during the matches. The sport-specific training methods are important in terms of seeing the effect of training during the competition. The development of the training experience of the athletes, the specificity of the training, and the physical responses to the training are also affected. For this reason, as the athletes approach professional levels, the specificity of the training will be effective for the athletes. The hereditary characteristics of athletes are also an extremely important parameter for success. The degree to which inherited abilities are transformed into performance during the competition will depend not only on the quality of training but also on the motivation and dedication of the athletes while preparing for the competitions (Gamble, 2013).

It is already known that the physical characteristics of athletes are among the most important factors in terms of their sportive success. In this context, coaches who are sports professionals should use their skills in this field in the best way. Trainers should apply the performance tests appropriate for the branch they have made to their athletes in a planned manner, and monitor the progress of the athletes constantly by comparing them with the studies in the literature. The study aimed to examine the relationship between leg volume, dynamic

balance scores, speed performance, and change of direction performance depending on agility by measuring the dorsiflexion angles of athletes aged 14-15 trained in football schools or the infrastructure of different sports clubs and are exposed to various training loads during the basic training period. When the literature was reviewed, many studies were detected evaluating the performance of athletes. However, it was also observed that there are limited studies conducted to learn the relationship of ankle dorsiflexion angles of football players with leg volume, balance, speed, and change of direction performance. For this reason, the purpose was to fill the gap in this field in the literature, as well as to be a source for new studies. One of the main reasons why the study was conducted was that we saw the important results of dorsiflexion angle in sports achievements in football players. Also, we believed that the dorsiflexion angle of the football players determined the performance criteria and could be associated with the balance, speed, and direction change performances of the football players.

METHOD

Research Design

The exploratory model, which is one of the relational screening models, was used because the relationship between two or more variables was examined in the research. The research was designed as an experimental study. In addition, it was designed as a relational research that questions at least two relationships and what kind of relationship they are. The study was designed in accordance with the Declaration of Helsinki. It was taken with the decision of Çanakkale 18 Mart University Scientific Research Ethics Committee dated 30.09.2021 and numbered 17/30.

Research Group

The population of the research was football players, and the sample comprised male football players playing in the amateur league in Cizre, Şırnak. A total of 76 male football players aged 14-15 playing football in Cizre district of Şırnak province participated in the study. In order to determine the height, weight, body mass index (BMI), leg volume, and sprint performance of the football players, the 30-meter speed test was applied, the Y-Balance Test was applied to determine their dynamic balance performance, and the Illinois test was applied for change direction performance. The obtained data were analyzed with the SPSS program. The correlation between leg volume, speed, balance, and change of direction performances of dorsiflexion angles was examined.

Table 1. Descriptive Characteristics of the Athletes Participating in the Research

Variables	(n=76)	X	SS	Min	Max
Age (year)		14.57	0.49	14	15
Size (cm)		166.21	10.12	135	186
Body Weight (bw)		53.69	1.58	30.00	81.60
Body Mass Index (BMI)		19.28	3.18	13.85	29.09
Right Dorsiflexion (°)		32.47	2.81	24	39
Calf Volume		2.068.87	439.34	1.080.99	3.081.60
Thigh Volume		5.335.30	1393.25	2.760.21	8.794.01
Y-Balance Anterior (cm)		61.73	7.89	45.00	77.00
Y-Balance Posterolateral (cm)		98.46	10.31	63.00	119.00
Y-Balance Posteromedial (cm)		95.57	10.42	59.00	112.00

	Variables	(n=76)	X	SS	Min	Max
Left	Dorsiflexion (0)		32.53	2.84	25	39
	Calf Volume		2.067.24	437.28	1.075.12	3.046.12
	Thigh Volume		5.333.26	1386.91	2.750.10	8.57.23
	Y-Balance Anterior (cm)		61.73	7.29	46.00	76.00
	Y-Balance Posterolateral (cm)		97.85	10.52	61.00	117.00
	Y-Balance Posteromedial (cm)		97.42	9.77	63.00	115.00
	Speed (sec)		4.88	0.57	4.11	6.99
	Change of Direction (sec)		17.52	1.21	15.21	20.76

Data Collection Tools

Anthropometric measurements (height, weight, body mass index) of amateur football players were taken. Leg volumes were measured. 30 meters sprint to determine sprint performance, the Y-Balance test for balance performance test, and the Illinois test to determine direction change performance were applied.

Applied Tests and Exercises

Height Measurement

The height of the football players was measured with a barefoot accuracy of 0.1 m using a SECA (Germany) branded height scale.

Weight Measurement

The body weight of the players was measured with a SECA (Germany) electronic scale with a precision of 0.5 kg.

Calculation of BMI

The formula below was used to determine the body mass index. Body Mass Index (BMI) = Body Weight / Height² (Baydemir et al, 2020).

Determination of Leg Volume

Since the volume between the gluteal fold and the sole is determined by the athletes, the gluteal folds of the athletes were determined first in order to take the volume measurements. When the athlete's body was in an upright position, the leg that was measured was placed on the bench in such a way that it was in 90 degrees of flexion and the thigh was at a 90-degree angle with the body. Then, the gluteal fold formed on the leg to be measured was marked with a pencil. Then, while the athlete lowered his leg and stood still with his legs shoulder-width apart, he placed the 50 cm ruler fixed on the spirit level on the marked area, and the scales were brought to the position of balance, and then a line was drawn to determine the determined gluteal fold. While taking the measurements of the athletes, the gluteal fold of the previous leg was taken as a reference in order to have a minimum error in the measurements of both legs. After determining the gluteal crease of one leg with the method mentioned above, the athlete is brought to an upright position, standing still with his legs shoulder-width apart, and the other end of the 50 cm specially prepared spirit level is placed at the determined gluteal crease, and the gluteal fold is balanced on the other leg and its lines were drawn (İşıldak, 2017).

Thigh Volume

The distance between the tibial point and the inguinal fold was measured with an accuracy of ± 1 millimeter at 10% intervals, with the legs shoulder-width apart while the athlete was standing (Marangoz and Özbalcı, 2017).

Calculation of Thigh Volume

After measuring the distance between the athlete's tibial point and the inguinal fold at 10% intervals, the volumes of the parts were calculated with a 10% interval as defined by the Frustum sign model method, and then the total volume of the thigh was calculated by adding the volumes of all the parts determined between the tibial point and the inguinal fold (Sukul et al., 1993; Lund et al., 2002; Karges et al., 2003; Carpenter and Özbalcı, 2017).

Calf Volume

The distance between the tibial point and the medial malleolus point was measured with an accuracy of $10\% \pm 1$ mm when the athlete was standing and in an open position with his legs shoulder-width apart (Marangoz and Özbalcı, 2017).

Calculation of Calf Volume

After measuring the distance between the athlete's tibial point and the medial malleolus point at 10% intervals, the volumes of the parts taken at 10% intervals were calculated as defined by the Frustum sign model method, the volumes of all the parts between the tibial point and the medial malleolus point were summed and the total volume of the calf measurement was calculated. (Sukul et al., 1993; Lund et al., 2002; Karges et al., 2003; Marangoz and Özbalcı, 2017).

Calculation of Leg Volume

After determining the volume between the gluteal fold and the sole, the total volume of the leg was calculated by adding the thigh and calf volumes of the athletes (Marangoz and Özbalcı, 2017).

30-Meter Speed Test

A 30-meter-long straight track was prepared on an artificial turf ground with sports boots and a photocell was placed at the start and end points. When the athletes waited 0.5 meters behind the starting point and felt ready, they were asked to run through the photocell gate at the finish point at the highest speed.

Y-Balance Test

The Y-Balance Test evaluated the ability of the athletes to maintain the dynamic balance of the lower extremity in the anterior, posterolateral, and posteromedial directions (Almeida et al., 2017). Athletes were asked to warm up before the application of the test. The validity and reliability of the Y-Balance test were determined as ICC, the intrarater range of 0.85-0.91, and the interrater range of 0.99-1.00 (Plisky et al., 2009). The application of the test was explained to the athletes and it was demonstrated by the trainer by applying it once. With the Y-Balance test kit, the measurements were taken by asking the individuals to lie down in both the right and left anterior-posteromedial-posterolateral directions. Athletes were asked to stand on one foot at the midpoint of the kit and lie down with the other foot in the anterior-posteromedial-posterolateral directions without losing their balance, and the farthest point where the fingertip reached was recorded. The test was repeated three times and the best performance was recorded in cm.

Illinois Agility Test

It is a test consisting of four funnels arranged in a straight line with a width of 5 m, a length of 10 m, and a gap of 3.3 m in the middle. The applied test was performed by performing a slalom run between 30 m straight and 20 m funnels, which includes 180-degree turns in a 10 m straight run. The athlete's track finish time was recorded in seconds. A second repetition was performed 5 minutes after the first test was applied to the athletes and the best score was recorded (Cureton, 1951).

Dorsiflexion Angle Measurement

To take this measurement, the iPhone Measure program, which is automatically installed on the iPhone smartphone (iOS 7 and above), was used. This study used an iPhone 11 Pro Max (Apple Inc., Cupertino, CA, USA). Before getting to work, the iPhone Measure app was compared for consistency across three trials on the same, hard flat, and angled surfaces. During the study, measurements were taken and controlled with a goniometer in 20 students for the calibration of the iPhone application. Then, the application was placed on the long axis on the ground and calibrated to zero degrees. For the convenience of the participants, the tests were performed in the planned order. To demonstrate an understanding of preconditioning, and technique, and reduce joint stiffness, participants were asked to perform a Weight-Bearing Lunge Test (WBLT) stance for 30 s three times. A small mark was made behind the heel of the athletes to indicate the one-centimeter superiority of the posterior calcaneal tuberosity as it was the measurement point (Gosse et al., 2021). The WBLT test protocol was used during testing (Bennel et al., 1999). Participants stood with their hands shoulder-width apart, leaning against the wall in front of them. The device was placed on the marked place on the heel of the participants as comfortably as possible, with their right heel on the ground, parallel to the left leg, and perpendicular to the wall for the right leg of the participants. The evaluator was assisted to move the right foot back until the squat position was maintained with the heel remaining on the ground and the knee aligned over the second toe. WBL test measurements were then taken with the knee in extension and knee flexion. At each time point, at each position, the evaluators made a single measurement of each athlete (Bennel et al., 2019).

Statistical Analysis

The SPSS package program was used for the analysis of the data obtained in the research. The Kolmogorov-Smirnov test was performed to determine whether the data obtained in the study were normally distributed. Spearman Rank Differences Correlation test, which is one of the non-parametric tests, was applied to determine whether there is a relationship between the right and left region measurement values and the speed and direction change performances of the athletes participating in the research. In the study, the level of significance was accepted as $p < 0.05$.

Table 2. Normality Test

Variables		Kolmogorov-Smirnov ^a		
		Statistic	n=76	Sig.
Right	Age (year)	0.374		0.000**
	Height (cm)	0.139		0.001**
	Weight (kg)	0.088		0.200*
	Body Mass Index (BMI)	0.080		0.200*
	Dorsiflexion (°)	0.154		0.000**
	Calf Volume	0.054		0.200*
	Thigh Volume	0.092		0.182**
	Y-Balance Anterior (cm)	0.084		0.200*
	Y-Balance Posterolateral (cm)	0.079		0.200*
	Y-Balance Posteromedial (cm)	0.076		0.200*

	Variables	Kolmogorov-Smirnova ^a	
		Statistic	n=76 Sig.
Left	Dorsiflexion (0)	0.111	0.022**
	Calf Volume	0.053	0.200*
	Thigh Volume	0.087	0.200*
	Y-Balance Anterior (cm)	0.078	0.200*
	Y-Balance Posterolateral (cm)	0.072	0.200*
	Y-Balance Posteromedial (cm)	0.075	0.200*
	Speed (sec)	0.226	0.000**
	Change of Direction (sec)	0.090	0.200*

*p>0.05, **p<0.01

Kolmogorov-Smirnov values were taken into account since the athletes participating in the research were over 30 as a result of the normality test applied to determine whether the data obtained in the study were normally distributed. As a result of the analysis, it was determined that age, height, right dorsiflexion, right thigh volume, left dorsiflexion, and speed values were not normally distributed, while other parameters were found to be normally distributed. (p>0.05). The data obtained are given in Table 2.

FINDINGS

In this section, the results of correlation analysis of right and left region measurements of football players are given.

Table 3. Correlation Analysis of Right Region Measurement Values of Football Players with Speed and Change of Direction

		Dorsiflexion	Calf Volume	Thigh Volume	Y-Balance Anterior	Y-Balance Posterolateral	Y-Balance Posteromedial	Speed	Change of Direction
Dorsiflexion	r	1.000	0.301**	0.427**	0.497**	0.331**	0.324**	-0.055	-0.092
	p	.	0.008	0.000	0.000	0.004	0.004	0.637	0.430
Calf Volume	r		1.000	0.569**	0.390**	0.305**	0.365**	-0.275*	-0.196
	p		.	0.000	0.001	0.007	0.001	0.016	0.090
Thigh Volume	r			1.000	0.237*	0.222	0.292*	-0.141	-0.077
	p			.	0.039	0.054	0.010	0.224	0.507
Y-Balance Anterior	r				1.000	0.675**	0.641**	-	-0.493**
	p				.	0.000	0.000	.000	0.000
Y-Balance Posterolateral	r					1.000	0.802**	-	-0.382**
	p					.	0.000	0.405**	0.000
Y-Balance Posteromedial	r						1.000	-	-0.336**
	p						.	0.478**	0.003
Speed	r							1.000	0.708**
	p							.	0.000.
Change of Direction	r								1.000
	p								.

*p<0.05, **p<0.01

As a result of the Spearman Rank Differences Correlation test conducted to reveal whether there is a relationship between the right region measurement values of the athletes participating in the research and the speed and direction change performance;

A significant positive correlation was determined between dorsiflexion and calf volume ($r=0.301$, $p<0.01$), between dorsiflexion and thigh volume ($r=0.427$, $p<0.01$), between dorsiflexion and Y-Balance anterior ($r=0.497$, $p<0.01$) between dorsiflexion and Y-Balance posteromedial ($r=0.331$, $p<0.01$), and between dorsiflexion and Y-Balance posteromedial ($r=0.324$, $p<0.01$).

There was a significant positive correlation between calf volume and thigh volume ($r=0.569$, $p<0.01$), between calf volume and Y-Balance anterior ($r=0.390$, $p<0.01$), calf volume and Y-Balance posterolateral ($r=0.305$, $p<0.01$) calf volume and Y-Balance posteromedial ($r=0.365$, $p<0.01$).

There was a significant negative correlation between calf volume and speed ($r=-0.275$, $p<0.05$). A positive significant correlation was determined between thigh volume and Y-Balance anterior ($r=0.237$, $p<0.05$), and between thigh volume and Y-Balance posteromedial ($r=0.292$, $p<0.05$).

A significant positive correlation was determined between Y-Balance anterior and Y-Balance posterolateral ($r=0.675$, $p<0.05$), and between Y-Balance anterior and Y-Balance posteromedial ($r=0.641$, $p<0.01$).

A significant negative correlation was determined between Y-Balance anterior and speed ($r=-0.431$, $p<0.01$), and between Y-Balance anterior and change of direction ($r=-0.493$, $p<0.01$).

A significant positive correlation was determined between Y-Balance posteromedial and Y-Balance posteromedial ($r=0.802$, $p<0.01$).

A significant negative correlation was determined between Y-Balance posterolateral and speed ($r=0.405$, $p<0.01$), and between Y-Balance posterolateral and change of direction ($r=-0.382$, $p<0.01$).

A significant negative correlation was determined between Y-Balance posteromedial and speed ($r=-0.478$, $p<0.01$), and between Y-Balance posteromedial and change of direction ($r=-0.336$, $p<0.01$).

A significant positive correlation was determined between speed and change of direction ($r=0.708$, $p<0.01$). The data obtained are given in Table 3.

Table 4. Correlation Analysis of Left Region Measurement Values of Football Players with Speed and Change of Direction

		Dorsiflexion	Calf Volume	Thigh Volume	Y-Balance Anterior	Y-Balance Posterolateral	Y-Balance Posteromedial	Speed	Change of Direction
Dorsiflexion	r	1.000	0.317**	0.438**	0.479**	0.203	0.290*	-0.023	-0.063
	p	.	0.005	0.000	0.000	0.079	0.011	0.843	0.589
Calf Volume	r		1.000	0.566**	0.297**	0.317**	0.331**	-0.275*	-0.197
	p		.	0.000	0.009	0.005	0.003	0.016	0.088
Thigh Volume	r			1.000	0.266*	0.199	0.177	-0.139	-0.080
	p			.	0.020	0.085	0.127	0.230	0.493
Y-Balance Anterior	r				1.000	0.734**	0.700**	-	-0.436**
	p				.	0.000	0.000	0.409**	0.000
Y-Balance Posterolateral	r					1.000	0.814**	-	-0.403**
	p					.	0.000	0.454**	0.000
Y-Balance Posteromedial	r						1.000	-	-0.440**
	p						.	0.444**	0.003
Speed	r							1.000	0.708**
	p							.	0.000.
Change of Direction	r								1.000
	p								.

*p<0.05, **p<0.01

As a result of the Spearman Rank Differences Correlation, a significant positive correlation was determined between dorsiflexion and calf volume ($r=0.317$, $p<0.01$), between dorsiflexion and thigh volume ($r=0.438$, $p<0.01$), between dorsiflexion and Y-Balance anterior ($r=0.479$, $p<0.01$), dorsiflexion and Y-Balance posteromedial ($r=0.290$, $p<0.01$), between calf volume and thigh volume ($r=0.566$, $p<0.01$), between calf volume and Y-Balance anterior ($r=0.297$, $p<0.01$), calf volume and Y-Balance posterolateral ($r=0.317$, $p<0.01$.) There was a significant positive correlation between calf volume and Y-Balance posteromedial ($r=0.331$, $p<0.01$). There was a significant negative correlation between calf volume and speed ($r=-0.275$, $p<0.05$). A significant positive correlation was found between thigh volume and Y-Balance anterior ($r=0.266$, $p<0.05$).

A significant positive correlation was determined between calf volume and thigh volume ($r=0.566$, $p<0.01$), between calf volume and Y-Balance anterior ($r=0.297$, $p<0.01$), calf volume and Y-Balance posterolateral ($r=0.317$, $p<0.01$) between calf volume and Y-Balance posteromedial ($r=0.331$, $p<0.01$). There was a significant negative correlation between calf volume and speed ($r=-0.275$, $p<0.05$). A significant positive correlation was determined between thigh volume and Y-Balance anterior ($r=0.266$, $p<0.05$).

A significant positive correlation was determined between Y-Balance anterior and Y-Balance posterolateral ($r=0.734$, $p<0.05$), and between Y-Balance anterior and Y-Balance posteromedial ($r=0.700$, $p<0.01$). A significant negative correlation was determined between

Y-Balance anterior and speed ($r=-0.409$, $p<0.01$), and between Y-Balance anterior and change of direction ($r=-0.436$, $p<0.01$).

A significant positive correlation was determined between Y-Balance posteromedial and Y-Balance posteromedial ($r=0.814$, $p<0.01$). A significant negative correlation was determined between Y-Balance posterolateral and speed ($r=-0.454$, $p<0.01$), and between Y-Balance posterolateral and deflection ($r=-0.403$, $p<0.01$).

A positive significant correlation was determined between Y-Balance posteromedial and speed ($r=-0.444$, $p<0.01$), and between Y-Balance posteromedial and deflection ($r=-0.440$, $p<0.01$).

There was a significant negative correlation between speed and change of direction ($r=0.708$, $p<0.01$). The data obtained are given in Table 4.

DISCUSSION

It is aimed to examine the relationship between leg volume, dynamic balance scores, speed performance, and change of direction performance depending on the agility by measuring the dorsiflexion angles of the 14-15-year-old athletes who were raised in football schools or the infrastructure of various clubs and were exposed to various training loads during the basic training period.

When the literature is examined; It is possible to find many studies on the subject. People spend most of their daily lives actively standing, so balance is one of the most important points in our lives. While our body is moving, it should be able to make joint movements such as flexion-extension, and these joints should have certain angles. In a study, it is stated that the amount of ankle dorsiflexion required for normal foot function, standing up, and walking should be at least 10 degrees (Weir & Chockalingam, 2007).

In a study, it was determined that there was a positive significant relationship between the dorsiflexion range of motion and dynamic balance performance in the ankle, and it contributed especially in the anterior direction. It is also stated that individuals with chronic ankle instability who have impaired ankle dorsiflexion range of motion performance may experience difficulties in balance performance. In addition, it is stated that before participating in sports, a screening with balance tests can play a preventive role in order to identify individuals at high risk for lower extremity injuries. It is stated that scanning the ankle dorsiflexion range of motion can give an idea about balance performances, as well as provide us with information against the risk of individual injury. In the continuation of the study, it is stated that the musculature of the hip has a strong relationship with the reach distances of the hip and knee flexion, especially the posterolateral and posteromedial aspects in the balance test (Basnett et al., 2013). In another study, it is stated that ankle mobility contributes to the fulfillment of dynamic tasks and can be used to strengthen balance performance as well as help to improve balance performance (Guillen et al., 2021). In their study, Kim and Kim (2018) investigated the effects of ankle dorsiflexion range of motion and lower extremity muscle strength on balance control ability in young adults. As a result of the study, it was found that there was a relationship between balance control ability, ankle range of motion, and lower extremity muscle strength in young adults.

There are many studies that show parallelism with our study on the relationship between muscle volume and balance that athletes have. In a study, it was determined that the mass and volume of the lower extremities positively affected the balance performance of the athletes. In

addition, they argued that the mass and volume of the lower extremity should be developed sufficiently in branches where balance performance is at the forefront (Akil et al., 2016). It has been determined that there is a significant relationship between the balance performances of young elite football players and their change of direction performance. In addition, it is stated that dynamic balance angle performance is important for its contribution to the change of direction performance and individualized special dynamic balance exercises should be performed to improve direction change performance (Rouissi et al., 2018). In another study, they found that balance training positively improved static and dynamic balance and agility performance. In addition, it has been stated that it has no effect on speed performance (Rüçhan et al., 2018). In another study, a statistically significant positive correlation was determined between agility performance and balance performance of male tennis players (Okudur & Sanioğlu, 2012).

Speed and change of direction are as important parameters for the performance of athletes as other motor features. In our study, a positive and significant relationship was determined between speed and direction change performances. When the literature is examined, different studies can be found. In a study, they found a significant difference between speed and change of direction performances. In the study, it is thought that speed and agility training may be effective in improving the performance of athletes in addition to the training specific to football players (Yaman & İpek, 2021). It has been determined that male elite rugby athletes perform lower than their maximum speed performance compared to female rugby athletes. In addition, it is stated that a more inclusive training plan that includes acceleration-deceleration exercises and direction-changing techniques for athletes will improve their ability to change direction and make their performance more efficient in changing direction (Freitas et al., 2021).

The relationship between the angles of dorsiflexion and injuries is mostly encountered. It is known that sports injuries adversely affect athletes financially and morally. For this reason, sports professionals need to minimize the risk of injury and prevent injury while creating training programs. In a previous study, it was reported that people with a greater dorsiflexion range of motion had more knee flexion. It was also found that athletes with low dorsiflexion joint range of motion may increase the risk of anterior cruciate ligament rupture, and also more knee Varus in single-leg squats (Dill et al., 2014).

In another study, they stated that army soldiers with limited ankle dorsiflexion angle increased the risk of lower extremity injuries and especially ankle sprains. In addition, it was stated in the study that the average ankle dorsiflexion angle taken from army soldiers was 45, and the lowest ankle dorsiflexion angle was 34 degrees. According to these values, it was stated that the risk of injury to soldiers below the average values is approximately 2.5 times higher. It has been stated that soldiers with low ankle dorsiflexion angle have a higher risk of suffering one of 5 lower extremity injuries, such as stress fracture, tibial periostitis, ankle sprains, Achilles tendinitis, and anterior tibial compartment syndrome, compared to soldiers with flexible ankle dorsiflexion angle. In a similar study, it was stated that decreased ankle dorsiflexion angle may increase the risk of patellar tendon injury. It has been stated that this type of injury, which is common among athletes, will negatively affect our competitive performance (Malliaras et al., 2006; Pope et al., 1998). In the study, it was determined that the muscle volume and dynamic balance performance of the athletes with good dorsiflexion angles were also good. In addition, it has been determined that the dynamic balance performance of the athletes with good calf volumes is also good, and the direction change performance of the athletes with good sprint performance is also good. The results obtained and the presence of biomotor features such as joint range of motion, strength, balance, change of direction, speed, quickness, and agility in football movement patterns reveal the necessity of increasing the basic

movement patterns of football players to the highest level. Also, coaches who are sports professionals should include different types of stretching in their training. When the literature was reviewed, it was reported in a study that stretching movements were effective in increasing the ankle dorsiflexion range of motion. It was also stated in the study that the most commonly used stretching type is static stretching. Using PNF and similar stretching types during the workouts is important (Medeiros & Martini, 2018).

As a result, it is thought that there is a relationship between ankle dorsiflexion angle, balance performance, muscle volume, speed, and change of direction performances and that trainers or coaches include these combined exercises while designing football-specific training will bring the athletes to a high athletic performance level in terms of performance. In addition to these, it is thought that in addition to the training of the athletes, different stretching movements for the lower extremities and exercises that increase muscle flexibility will be effective in increasing the ankle dorsiflexion angle and improving biomotor characteristics.

Recommendations

It is considered that the results of the study will contribute to the literature and can be applied in different branches and contribute to the diversity of studies. Also, studies to be conducted with female athletes and different age groups can contribute to the literature.

Acknowledgments

We would like to thank the athletes and club managers who voluntarily participated in the research for their moral support.

REFERENCES

- Akil, M., Celenk, C., Aktug, Z. B., Marangoz, I., Yilmaz, T., & Top, E. (2016). The Effect of Lower Extremity Masses and Volumes on the Balance Performance of Athletes. *BiomedicalResearch* (0970-938X), 27(3).
- Almeida, G. P. L., Monteiro, I. O., Marizeiro, D. F., Maia, L. B., & de Paula Lima, P. O. (2017). Y Balance Test Has No Correlation With the Stability Index of the Biodex Balance System. *Musculoskeletal Science and Practice*, 27, 1-6. <https://doi.org/10.1016/j.msksp.2016.11.008>
- Baydemir, B., Cirasun, V., & Yurdakul, H. (2020). The Effect of Strength Training Applied to Football Referees on Speed, Agility, Aerobic and Anaerobic Capacity. *International Journal of Mountaineering and Climbing*, 3(1), 15-26. <https://doi.org/10.36415/dagcilik.726492>
- Baydemir, B., & Aksoy, D. (2019). 17 ve 19 Yaş Amatör Futbolcuların Maksimum Sürat ve Yüksek Hızda Yön Değiştirme Performanslarının Karşılaştırılması. *Kilis 7 Aralık Üniversitesi Beden Eğitimi ve Spor Bilimleri Dergisi*, 3(1), 1-7.
- Banwell, H. A., Uden, H., Marshall, N., Altmann, C., & Williams, C. M. (2019). The iPhone Measure App Level Function as a Measuring Device for the Weight Bearing Lunge Test in Adults: a Reliability Study. *Journal of Foot and Ankle Research*, 12(1), 1-7. <https://doi.org/10.1186/s13047-019-0347-9>
- Basnett, C. R., Hanish, M. J., Wheeler, T. J., Miriovsky, D. J., Danielson, E. L., Barr, J.B., & Grindstaff, T. L. (2013). Ankle Dorsiflexion Range of Motion Influences Dynamic Balance in Individuals With Chronic Ankle Instability. *International Journal of Sports Physical Therapy*, 8(2), 121. <https://pubmed.ncbi.nlm.nih.gov/23593550>
- Bennell, K., Khan, K. M., Matthews, B., De Gruyter, M., Cook, E., Holzer, K., & Wark, J. D. (1999). Hip and Ankle Range of Motion and Hip Muscle Strength in Young Female Ballet Dancers and Controls. *British journal of sports medicine*, 33(5), 340-346. <http://dx.doi.org/10.1136/bjism.33.5.340>

- Bozkir, A. & Demir, M.B. (2022). The Relationship Between the Athlete Identities of Footballers and Their Level of Commitment to Sports. *Journal of Education and Recreation Patterns (JERP)*, 3(2), 193-206.
<https://doi.org/10.53016/jerp.v3i2.74>
- Carpenter, İ., & Özbacı, Ü. (2017). Calculating Leg Volume and Mass in Athletes Program. *Journal of Academic Social Research*, Year, 5, 223-231.
- Cuğ, M., Wikstrom, E. A., Pak, İ. E., & Diker, G. (2020). Dorsiflexion and Dynamic Postural Control Asymmetry in Elite Male Volleyball Players. *Cumhuriyet Medical Journal*, 42(3). <http://dx.doi.org/10.7197/cmj.vi.759097>
- Cureton T. The physical Fitness Tests of Top American Athletes. *The Journal of School Health*. 1951; 46-52. <https://doi.org/10.1111/j.1746-1561.1950.tb01378.x>
- Dill, K. E., Begalle, R. L., Frank, B. S., Zinder, S. M., & Padua, D. A. (2014). Altered knee and ankle kinematics during squatting in those with limited weight-bearing–lunge ankle-dorsiflexion range of motion. *Journal of athletic training*, 49(6), 723-732.
<https://doi.org/10.4085/1062-6050-49.3.29>
- Freitas, T. T., Alcaraz, P. E., Calleja-González, J., Arruda, A. F., Guerriero, A., Kobal, R., & Loturco, I. (2021). Differences in Change of Direction Speed and Deficit Between Male and Female National Rugby Sevens Players. *Journal of Strength and Conditioning Research*, 35(11), 3170-3176.
<https://doi.org/10.1519/JSC.0000000000003195>
- Gamble, P. (2013). *Strength and Conditioning for Team Sports: Sport-Specific Physical Preparation for High Performance*. Routledge.
- Gosse, G., Ward, E., McIntyre, A., & Banwell, H. A. (2021). The Reliability and Validity of the Weight-bearing Lunge Test in a Congenital Talipes Equinovarus population (CTEV). *PeerJ*, 9, e10253.
<https://doi.org/10.7717/peerj.10253>
- Hernández-Guillen, D., Tolsada-Velasco, C., Roig-Casasús, S., Costa-Moreno, E., Borja de Fuentes, I., & Blasco, J. M. (2021). Association Ankle Function and Balance in Community Dwelling Older Adults. *PloS one*, 16(3), e0247885.
<https://doi.org/10.1371/journal.pone.0247885>
- Işıldak, K. (2017). *Anaerobic Strength and Leg Volume After Swimming Exercise Investigation of Effect on Muscle Damage (PhD Thesis)*.
- Karges, J. R., Mark, B. E., Stikeleather, S. J., & Worrell, T. W. (2003). Concurrent Validity of Upper Extremity Volume Estimates: Comparison of Calculated Volume Derived From Girth Measurements and Water Displacement Volume. *Physical Therapy*, 83(2), 134-145. <https://doi.org/10.1093/ptj/83.2.134>
- Kerdaoui, Z., Sammoud, S., Negra, Y., Attia, A., & Hachana, Y. (2021). Reliability and Time-of-day Effect on Measures of Change of Direction Deficit in Young Healthy Physical Education Students. *Chronobiology International*, 38(1), 103-108.
<https://doi.org/10.1080/07420528.2020.1839091>
- Lagas, I. F., Meuffels, D. E., Visser, E., Groot, F. P., Reijman, M., Verhaar, J. A., & de Vos, R. J. (2021). Effects of Eccentric Exercises on Improving Ankle Dorsiflexion in Soccer Players. *BMC Musculoskeletal Disorders*, 22(1), 1-9.
<https://doi.org/10.1186/s12891-021-04337-y>
- Lund, H., Christensen, L., Savnik, A., Boesen, J., Danneskiold-Samsøe, B., & Bliddal, H. (2002). Volume Estimation of Extensor Muscles of the Lower Leg Based on MR Imaging. *European Radiology*, 12(12), 2982-2987.
<https://doi.org/10.1007/s00330-002-1334-1>
- Malliaras, P., Cook, J. L., & Kent, P. (2006). Reduced ankle Dorsiflexion Range May Increase the Risk of Patellar Tendon Injury Among Volleyball Players. *Journal of Science and Medicine in Sport*, 9(4), 304-309.

- <https://doi.org/10.1016/j.jsams.2006.03.015>
Medeiros, D. M., & Martini, T. F. (2018). Chronic effect of different types of stretching on ankle dorsiflexion range of motion: systematic review and meta-analysis. *The Foot*, 34, 28-35.
- <https://doi.org/10.1016/j.foot.2017.09.006>
Okudur, A., & Sanioğlu, A. (2012). Investigation of the Relationship Between Balance and Agility in 12-Year-Old Tennis Players. *Selcuk University Journal of Physical Education and Sport Sciences*, 14(2), 165-170.
- Plisky, P. J., Gorman, P. P., Butler, R. J., Kiesel, K. B., Underwood, F. B., & Elkins, B. (2009). The Reliability of an Instrumented Device for Measuring Components of the Star Excursion Balance Test. *North American Journal of Sports Physical Therapy: NAJSPT*, 4(2), 92.
<https://pubmed.ncbi.nlm.nih.gov/21509114>
- Pope, R., Herbert, R., & Kirwan, J. (1998). Effects of Ankle Dorsiflexion Range and Pre Exercise Calf Muscle Stretching on Injury Risk in Army Recruits. *Australian Journal of Physiotherapy*, 44(3), 165-172.
[https://doi.org/10.1016/S0004-9514\(14\)60376-7](https://doi.org/10.1016/S0004-9514(14)60376-7)
- Rouissi, M., Haddad, M., Bragazzi, N. L., Owen, A. L., Moalla, W., Chtara, M., & Chamari, K. (2018). Implication of Dynamic Balance in Change of Direction Performance in Young Elite Soccer Players is Angle Dependent. *J Sports Med Phys Fitness*, 58(4), 442-449. <http://dx.doi.org/10.13189/saj.2022.100606>
- Rüçhan, I. R. İ., Engin, H., & Aktuğ, Z. B. The Effect of 8-Week Balance Training on Balance Agility and Speed Performance in Wrestlers aged 12-15. *Gaziantep University Journal of Sport Sciences*, 3(1), 81-90.
- Sikora, D., Pałac, M., Myśliwiec, A., Wolny, T., & Linek, P. (2020). Assessment of the Relationship between Y-Balance Test and Stabilometric Parameters in Youth Footballers. *BioMed Research International*, 2020.
<https://doi.org/10.1155/2020/6968473>
- Stone, M. H., Collins, D., Plisk, S., Haff, G., & Stone, M. E. (2000). Training Principles: Evaluation of Modes and Methods of Resistance Training. *Strength & Conditioning Journal*, 22(3), 65. <https://doi.org/10.1080/14763140208522788>
- Stone, M. H., Potteiger, J. A., Pierce, K. C., Proulx, C. M., O'bryant, H. S., Johnson, R. L., & Stone, M. E. (2000). Comparison of the Effects of Three Different Weight-training Programs on the One Repetition Maximum Squat. *The Journal of Strength & Conditioning Research*, 14(3), 332-337.
<https://journals.lww.com/nsca-jscr/toc/2000/08000>
- Sukul, D. K., Den Hoed, P. T., Johannes, E. J., Van Dolder, R., & Benda, E. (1993). Direct and Indirect Methods for the Quantification of Leg Volume: Comparison Between Water Displacement Volumetry, the Disk Model Method and The Frustum Sign Model Method, Using the Correlation Coefficient and the Limits of Agreement. *Journal of Biomedical Engineering*, 15(6), 477-480.
[https://doi.org/10.1016/0141-5425\(93\)90062-4](https://doi.org/10.1016/0141-5425(93)90062-4)
- Vurmaz, O. M. (2018). Investigation of The Effect of Light Reaction Exercises on Agility, Quickness and Reaction Speed in U-20 Football Players. Science Specialization Thesis, Kocaeli University Health Sciences Institute, Kocaeli.
- Weir, J., & Chockalingam, N. (2007). Ankle Joint Dorsiflexion: Assessment of True Values Necessary for Normal Gait. *International Journal of Therapy and Rehabilitation*, 14(2), 76-82. <https://doi.org/10.12968/ijtr.2007.14.2.23518>
- Yaman, İ., & Özpak, N. (2021). The Effect of Speed and Agility Training Applied in Football Players on Some Performance Parameters. *Mediterranean Journal of Sport Sciences*, 4(1), 1-10.

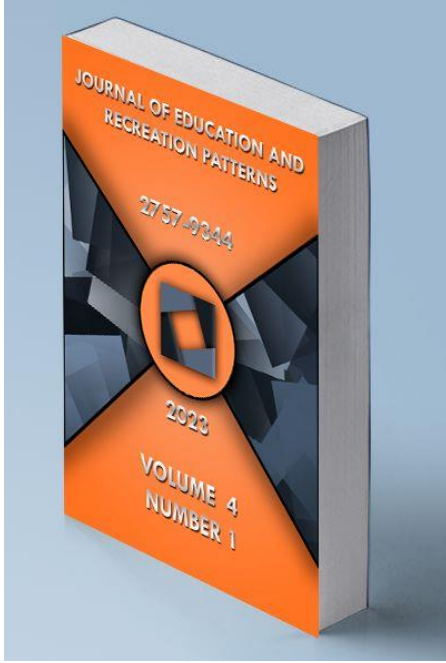
Copyright: © 2023 (Cirasun, V. & Baydemir, B.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com


Netflix In Leisure: A Qualitative Research On Users View


Nazlı Deniz ÖZ¹, Abdil ARI²

To cite this article:

Öz, N.D. & Arı, A. (2023). Netflix In Leisure: A Qualitative Research On Users View. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 116-133. DOI: <https://doi.org/10.53016/jerp.v4i1.122>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Nazlı Deniz ÖZ, Asst. Prof. Dr.; Selçuk University, Faculty of Sports Science, denizyilmaz@selcuk.edu.tr
 <https://orcid.org/0000-0001-9187-8596>

² Abdil ARI, Dr; Selçuk University, Faculty of Sports Science; abdilari@selcuk.edu.tr
 <https://orcid.org/0000-0002-5915-7761>

Netflix In Leisure: A Qualitative Research On Users ViewNazlı Deniz ÖZ¹, Abdil ARI²**ARTICLE INFORMATION**

Original Research Paper

Received 25.04. 2023

Accepted 12.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1**Pages:** 116-133**ABSTRACT**

The aim of this study is to examine the recreational value and the views on the application from the eyes of individuals who spend time on Netflix, one of the video-on-demand platforms. With these platforms, where digital channels are customer-focused, the products in international media became visible. Diversity, rapid response to demand, individual-specific systematic development of the algorithm, and accessibility without space and time limits have developed sustainable leisure time tracking behavior in the individual.

In this study, the "case study" method, one of the qualitative research methods, was used as the basis. The study was conducted using one-on-one, in-depth interview techniques in qualitative research. "Semi-structured interview questions" were used as a data collection tool in the study. 20 Netflix users from different ages, trends, and genders participated in the study on a voluntary basis. In the analysis of the data recorded with voice recorders, the Maxqda-2020 qualitative data analysis program was used. As a result of the analysis of the data obtained from one-on-one, in-depth interviews, 15 codes were revealed. It has been determined that the codes obtained from the interviews are grouped under six themes: motivation, comment, attitude, algorithm, type of program, and participation type.

Considering these results, it is predicted that Netflix usage will continue intensively. It has been determined that the motivation elements are directly related to the perception of leisure time boredom and content richness. It has been determined that attitudes are formed by liking or disliking, respect for values, and cultural relations. In addition, it has been stated that they see the application mostly as a method of discharge. In light of these results, the Netflix application is seen and evaluated as a tool for enriching the content, international accessibility, and feedback, as well as a leisure time evaluation tool.

Keywords: Leisure, Netflix, Recreation, Watching

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

The nature of social life and the situation it exists in come to the fore with the continuity of its variability. As Ibn Khaldun stated, society is a dynamic structure, not a static one, as it is in a continuous cycle of change. Paradigms affecting social habits, structures, values and behaviors are related to ages, periods, destruction and development processes of structures (Kizilçelik, 1994). The biggest factor in the change process is undoubtedly the effectiveness of scientific knowledge. The spread of knowledge has ontologically supported the recognition and interaction of cultures. Toffler states that while the agricultural period has a thousand-year cycle and the industrial period has three-hundred-year cycle, the information period undergoes ten-year transformations, showing the dynamism of information with its spread and interaction (Toffler, 2022).

The most remarkable and well-known example of this change in the digital sense was undoubtedly the Netflix application. Determining the importance of Netflix for users and identifying the recreational value of the application from the perspectives of individuals who spend time on Netflix were important in terms of shedding light on the digital age we live in. Transformation has shown its effect not only in the production cycle but also in social life forms. In the past, the needs of society were in a way to sustain life, to reach a safe environment and to encourage participation in working life in a holistic sense. However, with the decrease in the working hours of the individual due to mechanisation and technology, there has been a shift towards phenomena that make individual's life meaningful. While it has always been important for the individual to find a place in life, gain freedom of expression, manage his/her time effectively, socialise and be accepted, it has become absolutely visible with the increase in leisure time. It is seen that the phenomena of social life, whose levels of development have become visible with production, industry and political dimensions, have been replaced with information and therefore cultural interaction. The showcase of countries is formed in relation to how individuals use their leisure time, to what extent states can create these opportunities and how they manage public relations processes. It is assumed that the individual who can use his/her leisure time efficiently can have fun, rest and contribute to personal development. It is supported by the literature that the development of recreation science and the provision of at least one of these contributions make a difference in the work, family and social life of the individual. In this context, the codes obtained from the study were determined as motivation, comment, attitude, algorithm, program type and participation type.

Recreation is the activities preferred by the individual to effectively and efficiently spend his/her leisure time excluding physiological and life-related requirements. The person can utilise his/her leisure time actively or passively and aims to achieve physical, psychological and social gains during this time. In line with these aims, s/he carries out individual or collective activities in his/her fields of interest on a voluntary basis. These activities can be performed with active participation (exercise, choir, trip, etc.) or passive participation. As a result of technological development and change, passive participation elements have increased the diversity of demand-based consumption in the modern sense (Featherstone, 2013). The most visible product of this is the content productions that can be considered as programmes which are independent of time and space. In this context, platforms created by companies producing web-based content based on customer-oriented international trends have come to the fore. The most important factor in the preference of these platforms and the continuity of usability is defined as digitalization. Digitization is the name given to the spread of the processes of displaying, storing and transferring data in electronic media (Can, 2021). Digitalization reinforces the concept of globalisation with capitalist thought and is presented as a leisure facilitator in daily life practices. This situation has made the accessibility to global markets

attractive in the perspective of leisure time, and has enabled a new leisure time culture based on continuous consumption in the digital environment (Güzel, 2007).

The Digitization of Passive Recreation: Netflix

Netflix is a web-based video watching platform that can broadcast in many parts of the world, make ready-made content always available to watch, and create original content. It emerged in 1997 with the idea of renting DVDs over the internet and www.Netflix.com was launched in 1998. The site, which was initially established to present/rent ready-made content, became a pioneer in the sector in 2015 with its first original content "Beasts of No Nation". Currently, it is the broadcasting company with the largest content in the world, with the highest number of members and the highest internet usage among digital video-based platforms. Contrary to the programmed stream of the traditional broadcast reflex, video-on-demand platforms such as Netflix stand out with their continuous stream and diversity (Özel, 2020).

Even though Netflix seems basically the same for everyone, it is actually not the same for any user (Hunting, Gray, & Johnson, 2018). The system established by Netflix is not the culture shaped by the data, but the culture that shapes the data. This phenomenon is called algorithmic culture. Netflix's recommendation system contributes to this algorithmic culture. However, Netflix feeds this culture by creating highly personalized genres and continually improving its effectiveness and accuracy (Hallinan & Striphos, 2016).

The viewer, who goes to the cinema to watch a film, chooses one of the films available in the cinema, buys it, goes to the cinema hall and sits in front of the screen, but nowadays s/he has the opportunity to watch the film on television or on his/her phone, if s/he has internet. The viewer, who is included in certain rules and collective watching culture in the cinema hall, creates a cinema environment for himself/herself at home with Netflix, the digital broadcasting platform. S/He can take part in the cinema s/he created with the people s/he wants. While silence should be ensured and the phones should be switched off in the cinema hall, such a situation is not required in the individual's self-created watching action, and s/he can start and pause the film whenever s/he wants (Aydin, 2022). As it can be understood from this point, the habits of individuals who have to stay at home due to epidemics (Atasoy Aktaş, 2021) and natural disasters that have affected the world especially in the recent period have changed along with the entertainment culture as passive recreation. When recreational activities are considered, it is clear that Netflix has an understanding of globalization that considers local elements as well as local trends in the digital field (Brennan, 2018). Therefore, the future of Netflix has been secured (Özsefil, 2019).

In order to figure out these common points, it is necessary to consider many factors such as instant reactions, social positions, emotional tendencies and recreational attitudes of the viewer in a relational way (Oliver, 2002). Netflix, which fundamentally changes the understanding of entertainment and recreation, takes its place among the situations that further trigger the transformation in this changing act of watching. The individual with leisure time evaluates these features according to his/her own conditions and will participate or not participate in excessive watching (Aydin, 2022). It can also be said that waiting until the day the series or film will be broadcast, having to watch the advertisements or missing the opportunity to watch it due to work or other reasons (Atasoy Aktaş, 2021) affect the preference of the Netflix platform in individuals' recreational activities.

This study was designed as a case study, one of the qualitative research methods. This method was preferred in order to comprehensively address the use of netflix in leisure time, the preferences, orientations, likes and criticisms about the application. The criteria for inclusion in the study were determined as a) being a netflix member, b) watching the netflix content regularly, c) developing ideas for netflix application. Individuals in a wide age range

meeting these criteria were included on a voluntary basis. Thus, the profiles and thoughts of individuals who were easily accessible and active netflix users in the Turkish sample were interpreted in ontological philosophy. For certain populations and samples, when there are partial or inadequate theories, or when existing theories are insufficient to reflect the complexity of the problem under investigation, qualitative methods are used to examine the underlying causes and orientations and even to create new theories if necessary (Creswell, 2012).

This study aims to examine the effect of digital broadcasting platforms, which are increasingly becoming an industry product, on TV watching habits and to reveal the role of Netflix, which is considered the largest digital broadcasting platform, in this process. How active and effective digital systems are on users can also show the power of the platform. Therefore, measuring this can also contribute to the development of the platform. In addition, a new perspective can be brought to the ways of evaluating the effectiveness and process of digital broadcasting platform managements.

METHOD

Research Model

"Qualitative method" was used in accordance with the purpose of the study. Qualitative research is defined as a research process that includes and examines the methods of interview, observation, document analysis, narrative analysis, critical and ethnographic studies, etc. and presents the perceptions as they are in a holistic way (Patton 2002; Merriam 2009). The prominent features of qualitative research are sensitivity to natural environments, participatory roles of researchers, a holistic structure as an approach, ensuring that perceptions are clearly revealed, a flexible and inductive analysis structure in the research design (Yildirim and Şimşek 2013). Merriam (2009) stated that the aim of qualitative research is to focus on how individuals adopt and construct the reality they perceive. For this reason, participants are interested in how people perceive their own lives, how they shape their perceptions and how they make sense of their experiences. Creswell (2009) defines qualitative research as a tool used by individuals or groups to explore or make sense of a social or human problem. In this context, the paradigm of qualitative research is defined as intensive research, explanation of events and interpretation of meanings.

Qualitative research is the most useful method for determining and applying questions appropriate to our research purpose, obtaining and interpreting answers. Thus, Netflix, which is the subject of the research, is suitable for very subjective interpretations in terms of diversity within the platform. Defining common views based on subjective interpretations will guide the profiling of an audience.

Study Design

This study adopted the qualitative method to determine the perceptions, attitudes, algorithms, preferred genre and content views of individuals on Netflix. The sample of this study consisted of 20 Netflix members from different fields of study. The sample of this study was decided through a random sampling technique to ensure equal probability and chances for the participants to be chosen for the online interview. The type of tool used to obtain the required data is a face-to-face semi-structured interview. Thematic analysis was used in the study, as it is the best approach to analyze qualitative data. According to Braun & Clarke (2006, as cited in Nowell et al., 2017), using thematic analysis to collect data can contribute to a more accessible form of analysis as it does not require thorough theoretical and technological

information of other types of qualitative approaches. Six themes were used to accurately analyse the interview data: motivation, comment, attitude, algorithm, type of programme and participation type. After all themes were reviewed and defined, it was concluded with a write-up of the information gained throughout the analysis. Finally, the existing data were analysed again to ensure the accurate interpretation of the interview data. To ensure reliability and validity, the transcripts were analysed thoroughly and the codes were cross-checked by constantly comparing the data. In terms of validity, various strategies were used, such as triangulating different data as sources of information, using rich, thick descriptions to convey findings, presenting negative or inconsistent information and spending prolonged time in the field.

Selection of Study Group

Qualitative research is used because a study or subject needs to be explored (Creswell, 2020). It is very important to set out in a selective and purposeful way in reaching the right group to serve this discovery in terms of the quality and accuracy of the views on the subject. Since the aim of this study is to examine the views and attitudes formed by use, a conscious "purposive sampling method" was adopted. In addition to the inclusion criteria, it was paid attention that all participants had "Netflix use" and "Netflix attitude". Detailed information about the study was given before the interviews, and questions were asked before the study about whether they spent time on the Netflix application.

We selected 20 netflix members by using a purposive sampling method. Inclusion criteria were (1) having at least 1 year of Netflix experience (2) participating in the study voluntarily (3) still being a member and viewer on the Netflix platform. We determined the required number of participants by interviewing netflix members who met the inclusion criteria until the data reached saturation. The effective criterion for reaching data saturation is that the same answers start to be received. Charecteristics of the Participants are given in table 1.

Table 1. Participant Characteristics

ID	Gender	Experiences	Working Status	Age	Type of programme	Duration of the Interview
P1	Man	3 years	+	22	Multi	14 minutes
P2	Woman	3 years	-	54	Action-Romance	18 minutes
P3	Woman	2 years	+	23	Multi	15 minutes
P4	Woman	3 years	+	49	Romance	9 minutes
P5	Woman	2 years	+	26	Action	20 minutes
P6	Man	1 year	+	23	Adventure	17 minutes
P7	Man	4 years	+	37	Documentary	15 minutes
P8	Man	3 years	+	26	Science Fiction	21 minutes
P9	Woman	4 years	+	26	Science Fiction	20 minutes
P10	Woman	4 years	+	23	Fantastic	15 minutes
P11	Man	5 years	+	30	Action-Adventure	16 minutes
P12	Man	3 years	+	43	Science Fiction, Documentary	20 minutes
P13	Woman	2 years	-	24	Adventure	17 minutes
P14	Woman	3 years	+	32	Documentary	14 minutes
P15	Man	5 years	+	36	Multi	14 minutes
P16	Man	2 years	+	26	Science Fiction	17 minutes
P17	Man	2 years	+	25	War-Action	11 minutes
P18	Man	2 years	+	26	Action-Adventure	13 minutes
P19	Man	3 years	+	29	Action-Adventure	15 minutes
P20	Woman	4 years	-	26	Science Fiction	18 minutes

Data Collection Tools and Process

Before the data collection phase, the necessary literature and theoretical infrastructure for qualitative research was established. Considering this infrastructure, the lack of studies conducted from the perspective of leisure and recreation for the platform on which the study was performed was observed. Therefore, it was believed that examining users' perceptions, motivations for use, comments and attitudes towards Netflix application would be a guide in interpreting the concept of leisure.

"Interview method" was preferred as the most appropriate data collection method since it was assumed that it would be more possible to address the phenomenon from the perspective of the participants. The data collection tool was created by the researchers and aimed to be understandable, inclusive and open to interpretation. The data collection tool consisted of 3 sections.

Introduction: It starts with a statement giving detailed information about the study, ensuring that the data will be used only for scientific purposes and that any information revealing their identity will not be shared with anyone. It is also stated that the participant can leave the study at his/her request and s/he has the right not to answer the questions to be asked without giving any reason. Then, by considering all these principles and commitments, the participant is asked to state "verbally" that s/he voluntarily participated in the study and that s/he agreed to have his/her answers recorded with the voice recording tool.

Demographic Information Form: In this section, the participant's gender, age, year of active use of the Netflix application, working status and the type of program watched on Netflix were questioned.

Research Questions: The research questions includes past and present motivations (How did you decide to become a member of Netflix? What is the factor that is effective in maintaining your membership?), the meaning and perception attributed to Netflix (What is the role of Netflix in your life?, Do you think Netflix has brought you anything?), positive comments or criticisms (What do you think about Netflix content?, What are the situations that disturb you in the Netflix application?), attitudes that turn into behaviour (How does Netflix content affect your use?, What do you do when you are uncomfortable using the Netflix application?).

The questions were prepared by the researchers and checked by a lecturer in the faculty of communication working on digital media, a lecturer in the department of recreation and a qualitative research methods instructor-interpreter for comprehensibility and suitability for the purpose. After the control, a semi-structured interview form was created with 8 questions and 3 probe questions.

The questions were first tested on lecturers using Netflix to test face validity. No problems were detected in comprehensibility and interpretation. For this reason, Netflix users from various age and occupational groups, suitable for the purpose of the study, were interviewed on the basis of voluntary participation. Some of the participants were interviewed face-to-face while others were interviewed on online interview platforms. The reason for this is to achieve more objective answers by giving the participants the option to respond in the environment they find comfortable without time or space constraints. Interview durations are given in Table.1. Randomly selected individuals were evaluated by the snowball method within the scope of purposive sampling inclusion criteria. When the study reached saturation (repeating the same answers, providing sample diversity, determining the predictive power of the population), the study was ended and the transcription process was started. After the

transcription process, the transcribed answers were shared with 20 participants and the final approval was obtained and the analysis phase was started.

Data Analysis and Reliability

The data were analysed using inductive and thematic analytics to identify, evaluate and develop a theme expressed by the participants (Alhojailan & Ibrahim, 2012). The responses of each participant, especially in the first stage, were coded using keywords so as not to overlap. The Maxqda Analytics 21 program was used to facilitate the coding and categorization of researchers. The data from surveys and interviews were entered into Nodes and Cases to be grouped into data with specific codes. Thematic maps showed the organization of concepts according to various levels, and potential interactions between concepts were then developed. The analysis team discussed all codes and categorizations, as well as the possibility of integration between codes so that the codes could be streamlined. This inductive technique allowed the identification of themes that participants gave in response to the research questions (Liu, 2011).

It is aimed to avoid methodological errors based on the necessary ethical principles while reporting the research results. For this, the data analysis and reporting process specified by APA (2010), Creswell (2012) and Lincoln (2009) was followed. The principles considered in analysing and reporting in this process are listed below;

- An unbiased evaluation was made: The correlation between common codes and themes was revealed in the statistics made by two researchers and an independent interpreter, and those that differed were discussed and agreed on the basis of the literature.
- Nicknames or IDs were created for the participants.
- Only positive results were avoided: Consistency between coders was taken into account and positive-negative or contradictory statements were honestly reported.
- No falsification or fabrication was committed: The data were analyzed and reported honestly and without any manipulation.
- It was written in a language suitable for readers and researchers: The methodology and findings of the study were written in a simple and plain language and in a detailed way that does not leave any question marks.
- Information that would decipher the participant was withheld.

All texts were examined and analyzed by two researchers while determining the codes in the study. The answers given by the individuals were discussed, the harmony between the researchers was taken into consideration, and the themes that the codes could combine on a common denominator were determined in line with the purpose of the research. While creating these codes and themes, the focus was on interpretations on the leisure perspective and the idea of recreation.

Theoretical Position and Self-reflectivity

Positioning ourselves as researchers within the framework of critical realism involves questioning our own assumptions to better understand how those participating in our study interpret their own actions, thoughts and feelings (Manicas, 2009). Firstly, all researchers involved in this study experienced Netflix recreationally. In addition, researchers experienced other video platforms for years, both for educational and recreational purposes. After these experiences, we decided to conduct research on the recreational purposes, preferences and tendencies of Netflix members.

Ethical Considerations

Detailed information about the study was given before starting the interview, and a statement was made promising that the data would only be used for scientific purposes and that any information revealing their identity would not be shared with anyone. In addition, it was stated that the participant could withdraw from the study at his/her request and it was stated that he had the right not to answer the questions to be asked without giving any reason. Subsequently, by considering all these principles and commitments, he was asked to state verbally that he voluntarily participated in the study and that he agreed to have his answers recorded with the voice recording tool. Interviews took place on verbal consent. Data transcripts and participant information are only available to the researchers and have not been shared with anyone. For the security of the data, after decryption, the audio recordings were transferred to the hard disk of the researcher and deleted from the computer environment. The transferred hard disk is encrypted and only accessible to the researcher.

In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. None of the actions stated under the title "Actions Against Scientific Research and Publication Ethics", which is the second part of the directive, were not taken.

Ethical review board name: Selcuk University Faculty of Sport Sciences Non-Intervantional Clinical Research Ethics Committee. Date of ethics review decision: 25.03.2022, Ethics assessment document issue number: E-40990478-050.99-261036.

FINDINGS

As a result of the analysis of the data obtained from the one-to-one in-depth interviews, 15 codes emerged. It was determined that the codes obtained from the interviews were grouped under 6 themes: motivation, comment, attitude, algorithm, type of programme and participation type. Themes and codes are given in Table.2. Leisure theories, motivation theories, and needs theory were utilised while forming these codes and the themes in which the codes are combined.

While creating the leisure boredom perception, social environment and content codes under the motivation theme, the aim is to determine the factors that motivate the individual to use Netflix application. As can be seen from the distribution, the most influential factors were boredom perception and content, and some participants even stated both at the same time. Another code formed under the same theme is the social environment .It can be said that individuals use the Netflix application in order not to be away from the interests of their environment since their friends or family use it. Therefore, 1 internal and 2 external factors come to the fore as the reason for motivation.

The boredom perception as an internal factor is an issue that takes place in leisure studies. It refers to the fact that the individual does not know what to do during the time left behind from his/her working life and daily obligations, gets bored with the activities s/he does or these activities do not appeal to him/her. From another point of view, boredom, which can be defined as an obstacle to qualified leisure time, increases the individual's motivation to watch video on demand in our study. Our participants frequently stated that they were bored in their leisure time and turned to the video platform Netflix because they could not find anything to do. *"Since we don't go out much, we spend time at home and watch TV series. Sometimes it is enjoyable to watch with subtitles."(P1), "Due to the time constraints of working life, there is naturally a lot of time left for TV series and films. I got into the habit of watching TV series on*

the phone in bed." (P8), "Since I have a lot of time, I spent some days only on Netflix. My watching rate is increasing." (P9), "Of course, my watching frequency has increased since I have a lot of leisure time and I get bored in this leisure time." (P13).

Content, another motivating factor for watching, Netflix's unique content and the availability of this content can be considered as an external motivation tool. The fact that the individual knows that he/she will find the most suitable content for himself/herself and will experience a sense of satisfaction undoubtedly makes it easier for him/her to prefer watching Netflix rather than participating in another activity or platform. Participants expressed this as follows. *"For example, we are members of exxen only for the program named Konuşanlar. But, we are pleased since Netflix has many alternatives" (P1), "I've decided to become a member because the films and series I want to watch and expect to be released are on Netflix." (P10), "The ability to watch anytime anywhere and the wide content offered make Netflix a truly sought-after application. That's why I like and recommend Netflix." (P12).* In addition, the fact that Netflix is a very popular watching tool increases the likelihood of word-of-mouth advertising and motivates the individual to be curious about and access these contents. *"I learnt that a very popular TV series was broadcast there and I became a member." (P9).*

The last code of the motivation theme is social environment, which is another external motivator. After meeting their basic needs and security needs, individuals need to socialise and belong to a group in line with common goals and tastes. This is also valid for leisure activities. We are influenced by the tastes and orientations of the social environment to which we belong. This influence motivates the process that turns into behaviour. The participants expressed the processes of being motivated to use the Netflix thanks to the social environment as follows: *"During my visit to my brother who lives in Istanbul, I saw that he was a Netflix member. I became a Netflix member with his recommendation." (P12), "I decided to become a member of Netflix with the advice of my friends at the school where I worked." (P14), "I have a lot of friends who use it. I became a member with their recommendation." (P19).*

Our second theme, "comment", allows us to understand what kind of emotions and perspectives the individual develops when using Netflix. Netflix serves 230 million users in 190 countries worldwide. Appealing to such a wide audience will gain continuity by increasing its content and continuously improving its applications. When the application is examined, it is seen that there are contents that appeal to all cultures. There are even series and films created specifically for each country. The most remarkable aspect of our participants' comments coded as "liking" is that it is affordable and accessible. In addition, the presence of programs that appeal to the audience rather than long advertisements, uncontrollable flow and content customized for the individual can also be considered as an important factor in the broadcasting policy in our country. Individuals can freely choose and watch the program they want, whenever they want. These features are at the very basis of the concept of recreation itself. In addition, the fact that these opportunities are provided for nominal fees, or the possibility of meeting these fees with more than one person is frequently stated. *"I am satisfied in general. The fact that a membership can be used by many people makes it very economical." (P4), "Its positive feature is that membership fees are affordable and it is great to have accounts for 3-4 people. Other positive features are that there is unlimited content in every field I wish and that it is ad-free." (P8), "The best feature for me is that I always have access to Netflix for programs that I can't find on TV or can't arrange my time to watch them even if I can." (P18).* In addition, the division of content as children and adults is an important factor in checking the suitability of the content for the individual or social group without browsing the content. *"It is great that there is an age limit for children. There are contents that appeal to both adults and children. The price is also very reasonable. It costs more to watch a film in the cinema." (P1).*

Although the fact that the Netflix application is worldwide and has content for every culture, value and orientation creates a positive perception for the user, another result of reaching such a large audience is the tendency to develop a critical perspective. It is not possible for platforms with such a large content network to be fully appreciated. Thus, we see the reflections of this situation with another code "criticism" in our theme. Although almost all of our participants expressed their appreciation for some reason, more than half of them expressed their criticisms more frequently. Research shows that more than 90% of the Turkish population has a Muslim religious identity, and more than 55% of them describe themselves as conservative, nationalist or Islamist. When the answers of the participants are analysed, it is observed that the criticisms are the result of disregarding or misrepresenting these value judgements in this regard on the platform. *"Generally, Turkey is portrayed as an underdeveloped bigoted country. There is a prejudice against Muslims."* (P3), *"There is an attack of thought against Muslims."* (P4), *"I come across scenes that despise Muslims. Scenes that confuse Turkish culture with Arab culture are disturbing. Let me explain the religious dimension. In TV series and films, I encounter scenes in which Muslims are shown as uncultured and reactionary. For example, I came across it in the TV series 'Da Vinci'."*(P16), *"There are nonsensical criticisms and contents about Turks and Muslims. Their religious dimensions are bad. I don't like when they denigrate our religion in TV series and films."* (P20). This code, which was accessed in line with the participant views, raised the question of how it affects attitude.

Attitude is the way of dealing with a problem, the manner and behaviour adopted in the face of a problem. As a result of our study, the frequency obtained in the criticism code made it necessary to address how the participants developed a behaviour against a disturbing content encountered in the Netflix application. Two attitudes develop according to the answers. However, it is the behaviour of "leaving the application" rather than the behaviour of "staying in the application" that is widely reported. The individual reported that when he/she encountered the content that he/she was uncomfortable with, he/she stopped watching that content or skipped part.

"There are lots of slang and swear words in most of the content. Although they are presented differently during translation, I think that some films are not suitable for children to watch. I prefer not to watch such content." (P1), *"Religiously 'sinful' topics are very intense, and culturally 'LGBTI' people and behaviours disturb me a lot. Most often, content that contains 'LGBTI' bothers me a lot. If it is a content I like very much, I fast forward the scenes I am uncomfortable with."* (P8), *"If the reaction against Muslims and Turks really continues, I stop watching the film."* (P16). On the other hand, there is also a tendency to stay in the application or content for reasons such as the free choice offered by the Netflix platform and the fact that this can be tolerated in culturally specific content. *"I am not disturbed because I have freedom of choice."* (P9), *"Even if I am offended by some parts of the content, I only watch the part that interests me."* (P19), *"In general, they show Turkey as an undeveloped and bigoted country. There is a prejudice against Muslims. On the other hand, there are also positive aspects portrayed in our own TV series or films. So I do not show any reaction and I continue to watch them."* (P3).

Algorithm is the most assertive artificial intelligence-supported initiative of the Netflix platform, which aims to offer the most appropriate content in the catalogue by following the profiles of the individuals. It is known to be affected by many factors. This structure, which offers the most appropriate content by combining comprehensive inputs such as likes, watching history, watching hour interval, the device on which it is watched and how long it is watched, provides convenience to members. When our participants are questioned in terms of algorithm compatibility, the view "Generally compatible content is presented" is dominant.

"They overlap in general. It appeals to my interests and taste of watching at a high level." (P8), "It matches the ones I like, but they usually highlight the most popular films, as if everyone has to watch the same things" (P4), "It usually brings up other popular, widely watched TV series or films. They have similar themes to the series I like, so I am pleased with it." (P3). In line with these views, it can be concluded that commitment to the platform increases with the expansion of content to be watched according to the interests and tastes of individuals. In addition, some participants think that Netflix follows an algorithm-independent process and imposes suggestions for the development of different perspectives. Partially compatible or incompatible algorithm suggestions do not cause individuals to develop negative attitudes. Rather, they stated that they ignore this inconsistency and emphasize the value of the freedom to choose the content that suits them. In addition, participants with incompatible views stated the intensity of the algorithm's attempt to highlight popular content.

"I do not pay attention to the content recommended by Netflix. I research genres such as TV series, films, documentaries. I choose and watch the ones that are suitable for my development." (P7), "The remaining 50%, which do not match my taste, seem to me to be suggestions aimed at steering human morals and behaviors in a different direction. By subconsciously giving people the message 'You will like this content', they can actually offer suggestions that are very unrelated to what I watch." (P13), "When I open Netflix to watch the films that I have watched before while eating something, it constantly shows old films. In general, only the films that are popular in the world and in our country are only on the home page, and as a suggestion, it does not show the films of other countries on the home page, I think this is their biggest shortcoming." (P16).

There are two types of participation in leisure activities: casual or serious leisure activities. They can be planned individually or collectively with any social group. The Netflix platform, which we specify as a digital leisure time tool, is suitable for both types of participation due to its accessibility anytime, anywhere. In addition to relaxing individually, a cinema environment can be created in a friend/family environment. Most of the individuals participating in our study stated that they tend to watch Netflix content "alone". *"I prefer watching it alone. It allows me to focus more on the content." (P7), "I like watching it alone more. When I watch it with someone, I get distracted if they talk." (P3), "I don't watch dubbed TV series because the emotion and spirit are best reflected in the mother tongue. Besides, my purpose of watching TV series is to improve my English. So, I mostly watch series with Turkish subtitles and unfortunately, since my family members do not like watching series with subtitles, I mostly watch series in English alone." (P13), "When I am alone, I am more motivated and my level of understanding, motivation and attention is better." (P17).* As can be understood from the statements, individuals are also present on this platform for personal development. In this respect, they prefer to be alone to facilitate their focus. Another thing that should be mentioned is that they want to focus and not be distracted while watching the content on the platform. Thus, it can be understood that Netflix is a serious leisure activity rather than casual leisure activity. In addition, another reason that can be considered as a common denominator with those who prefer to watch Netflix with a "collective" association is that 85% of the participants in the study are working individuals. In addition to preferring activities that can be done alone for post-work refreshment, the common point of those who prefer to watch Netflix as a means of socialising with family or friends in the remaining time from work is the desire to spend "quality" leisure time. *"I prefer to watch it to spend time with my family and friends, and it becomes more enjoyable by making comments during and after the TV series and films." (P6), "I usually prefer to watch with my family, but not all content. As a busy worker, I want to spend my limited time with my family. That's why I mostly watch it with my family." (P11).*

Table 2. Themes and Codes Map

Code System	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	T
Motivation																					
Boredom	*	*	*	*			*	*	*	*	*	*	^		*						13
Social Circle		*										*		*				*	*		5
Content	*				*	*	*	*	*	*	*	*					*			*	13
Comment																					
Liking		*		*	*	*	*	*	*	*				*		*	*	*	*	*	14
Criticism	*		^	^		*				*	*		^	*		^			*	^	16
Attitude																					
Leaving the app	*			*		*		*		*		*	*	*		*			*	*	11
Staying in the app			*						*										*		3
Algorithm																					
Inconsistent with						*	*						*	*		*					5
Consistent with	*	*	*	*	*	*		*		*		*	*	*		*	*	*	*	*	16
Participant Type																					
Alone	*		*	*			*	*	*			*	*	*		*	*			*	12
Collective		*			*	*					*	*							*		6
Total	6	7	6	8	5	9	8	7	7	7	6	9	9	7	2	9	5	4	8	8	137

Note: type of programme has been given in table 1, *The participant stated at least once, ^ The participant has stated more than once., T: total

DISCUSSION

The products of the ongoing digital age, which refers to the technology and information revolution that took place at the end of the twentieth century and the beginning of the twenty-first century, are changing the attitudes and habits of societies. Digital transformation has spread to all areas. It can be said that the level of influence is very high and individuals adapt very quickly. The fact that technology and its products make life easier, make time management effective and increase accessibility has increased the demand. The supply created by the increasing demand appears in all areas.

The aim of this study is to examine the Netflix platform, a product of the demand-based video industry, from a recreational perspective. In this context, Netflix usage to spend leisure time was evaluated. The factors motivating individuals to use Netflix, their attitudes towards the platform, their views on algorithm compatibility, their preferred genres and types of participation were questioned.

The opinions of 20 netflix members were included in the study. Accordingly, it was observed that the motivation sources of individuals who watch Netflix content to spend leisure time are boredom, social environment and content, and that their likes and criticisms can be associated with cultural values, and their attitudes towards these likes and criticisms affect their tendency to continue or leave the application. In addition, the participants stated that the algorithm suggestions were generally compatible and that they prefer to watch Netflix content alone rather than in their social environments in order to evaluate it effectively.

It is an undeniable fact that Netflix and similar applications affect traditional watching habits. While media organisations determine the time and stream in the traditional program order, video-on-demand platforms have created freedom of choice by leaving this stream, watching time, genre and content to the viewer (Gümüş, 2021). In addition, the developed algorithm networks have created an interactive process with the match they offered to the viewer. Therefore, a free world has been created that frees customers from the limitation of the relationship with traditional watching products and allows freedom of choice through new-era

internet-based video platforms, freeing viewers from the cycle of watching, not watching or changing channels (Gilbert, 2019). The individual's response to this broken cycle has emerged as a serious perception of activity in his/her free space, where s/he can regulate its time, place, genre, and means of watching, even by paying the price. The relationship between the viewer and the platform has developed so much that demands can be answered immediately, a content that has been removed from the broadcast can be broadcast again with the pressure of the viewers, and it can keep the relationship alive by offering suggestions with artificial intelligence applications that detect whether a product is liked or disliked, and even where the product is left unfinished (Varela & Kaun, 2019). Not only new products are offered through new media, but also traditional media products from the past are re-presented, and thus individual values and elements are revitalised in the memories with nostalgia or commitment (Özel, 2020). Through platforms that contain all these features and more, the continuity of the idea of watching reinforced in the individual is supported. In societies like our country, where the habit of watching television is high and the traditional family and social structure continues (Mutlu, 1999), such applications offered with more flexible opportunities will undoubtedly reinforce the idea of watching television for recreational purposes or being involved in the watching process through any smart device (Parker et al., 2016).

As a result of the study, it is seen that the codes that emerge by defining the motivations for the use of the Netflix platform by the viewers themselves are formed as boredom, social environment and content. It is thought that all digital products create a tendency to escape in the individual (Öz & Üstün, 2022a). Individuals tend to escape to applications that create a sense of flow in an environment where they are bored or when they cannot regulate the use of leisure time (Öz & Üstün, 2022b). At this point, the ease of constant availability of Netflix-like applications creates an effective motivation. In addition, as in all recreational activities, the individual is motivated to use Netflix with the influence of friends and social environment. Common interests in the environment to which the individual belongs can undoubtedly change the individual's participation type (Burch Jr, 1969; Ho, 2022). Netflix has a serious usage potential in our country as well as around the world (Matrix, 2014). Therefore, the utilisation rate and interest of the environment affects the motivation of participation (Coşgun, 2021). Content, which appears as another motivational tool, affects both individual continuity and the future of the company. Netflix has even reinforced customer orientation by taking content production to the next level. It has produced content specific to cultures, societies, age groups, orientations, and even active periods (Ramasoota & Kitikamdhorn, 2021). With the broadcasts produced by itself, it has proven its success in creating supply to demand with most of its products. Therefore, customer satisfaction has increased, and one of the most important reasons for the continuity of Netflix membership has been content diversity (Lobato, 2018).

Netflix views, Netflix attitude and algorithm compatibility are associated as themes that feed each other. The feature that uses algorithms to track watching patterns and provide suggestions and favorites is helpful for viewers. The study shows that the algorithm and the viewers' opinion that they are compatible support each other. In addition, another view obtained from the study is that criticism focuses on cultural and religious values (Çakir 2022; Akova, 2020). Despite being based on a customer-centered marketing strategy, the multicultural structure of the application and its accessibility to individuals from all countries have increased the visibility of conflicting ideas (Çinar, 2021; Yegin, 2021). Undoubtedly, it is not possible for such multinational applications to favor all their customers at the same time. However, answers such as "They generally show Turkey as an undeveloped and bigoted country (P3)" or "I come across scenes that despise Muslims" were found in our study. The reactions to these criticisms, which are supported by answers such as "Scenes that confuse Turkish culture with Arab culture are disturbing (P16)" result in leaving the application or even unsubscribing. In addition, there are also individuals who only react but continue to use the

application. However, Netflix continues to grow in all nations year by year. The existence of like and dislike options within the application and the option to end the programme instantly are at the customer's discretion. In addition, it has been reported that with the active use of social media and customer services, the content can change and become compatible with values. As a result, it is seen in the study that the content liked by the participants is more intense and that the use of the application continues even though there are criticisms.

CONCLUSION

Netflix-like broadcasting organisations continue to radically change watching habits. Media applications that offer the opportunity to watch anytime and anywhere will continue to take place more intensively by diversifying and developing in the lives of the viewers who leave the compulsory broadcast stream of television, which is a social leisure time utilisation tool. The increase in the perception of boredom, especially caused by the pandemic, has led to the widespread use of these applications. Video-on-demand platforms, which have become both widespread and accessible afterward, are now considered as individual or group passive recreational activities. It is considered likely that their preference rates will rise with the increase in the use of technology and the level of responding to the demands of all generations. Therefore, it is an acceptable assumption that leisure time behaviour will be concentrated in on-demand content producers. This situation can be perceived as being able to utilise technology and its opportunities and to evaluate facilitating factors. However, it is thought that the tendency of intense consumption in the younger generation will increase inactivity. It is seen that technology addiction is increasing day by day and preventive processes are adopted as policies in all nations. Researches should be designed with the perspective of revealing the short, medium and long-term effects of technology-based passive recreation and developing ways to get rid of them.

It is certain that watching habits carry cultural traces. Excessive watching and exposure to excessive content consumption are also the continuation of traditional watching habits. The barriers to participation in active physical activities should be questioned in a relational context against the facilitators of the individual's participation in passive watching activity.

Recommendations

This study expresses the Turkish sample, it is a purposefully selected study that questions only a single platform. The age range is not limited. It is important to make separate evaluations for young people, children and adults. In addition, evaluating and revealing the opinions of the members of different video platforms will benefit content developers in creating a vision.

Acknowledgments

We would like to thank the participants who collaborated with us to complete this research and Dr. Ferhat Üstün for his contributions.

REFERENCES

- Akova, S. (2020). A look at the digital carrier of the phenomenon of marginalizing intercultural communication through Netflix Digital Television: A semiotic analysis on 13 Commandments (13 Commandments). *OPUS International Journal of Society Studies*, 15(26), 4479-4516.
- Alhojailan, M. I., & Ibrahim, M. (2012). Thematic analysis: A critical review of its process and evaluation. *West east journal of social sciences*, 1(1), 39-47.
- American Psychological Association (2010). *Publication Manual of American Psychological Association*(6th ed.). Washington, DC.
- Atasoy Aktaş, A.D. (2021). *An Analysis of Artificial Intelligence Technologies Used in Digital Platforms Based on User Motivation: The Netflix Example*. Doctor's Thesis. Istanbul University Institute of Social Sciences. Istanbul.
- Aydın, E.Ş. (2022). *The Transforming Cinema Audience in Turkey During the Covid-19 Pandemic: An Analysis on Netflix*. Master Thesis. Marmara University, Institute of Social Sciences. Istanbul.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Brennan, L. (2018). How did Netflix spread to 190 countries in 7 years? *Harvard Business Review*, 12.
- Burch Jr, W.R (1969). Social circles of leisure: Competing explanations. *Journal of leisure studies*, 1(2), 125-147. <https://doi.org/10.1080/00222216.1969.11969720>
- Cakir, F. (2022). *Islamic Images on Digital Platforms (Example of Kalifat Series)*. *ATEB*, (7), 1-13. <https://doi.org/10.51575/atebe.1066335>
- Can, E. N., Koçer, M., & Hekimoğlu Toprak, H. (2021). A Study on Consumers' Use of Netflix. *Erciyes Academy*, 35(1), 323-344.
- Cinar, A. H. (2021). *Religion and Terrorism: A Sociology of Religion Study on Content on the Netflix Digital Platform*. Master Thesis. Necmettin Erbakan University, Konya.
- Coşkun, G. (2021). Leisure access status of Turkish society: motivation and inhibition. *Ahi Evran University Journal of Social Sciences Institute*, 7 (1), 50-64. <https://doi.org/10.31592/aeusbed.691148>
- Creswell, J.W. (2009). *Research design: Qualitative, quantitative and mixed methods approaches* (3rd ed.). Thousand Oaks, CA:Sage.
- Creswell, J.W. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research* (4th ed.) Upper Saddle River, NJ:Pearson Education.
- Featherstone, M. (2013). *Postmodernism and consumer culture*. Detail Publications.Istanbul.
- Gilbert, A. (2019). Push, pull, restart: The TV restarts and streams media. *Television and New Media*, 20 (7), 686-701. <https://doi.org/10.1177/1527476419842418>
- Gümüş, B. (2021). From Marathon Viewer to Overwatch: The Impact of Netflix on Watching Habits. *Turkish Journal of Communication Studies*, (37), 147-169. <https://doi.org/10.17829/turcom.862011>
- Güzel, M. (2007). Globalization, consumer culture and youth websites on the Internet. In *YeniMedia Studies* (pp. 177-204). Footnote Publications.
- Hallinan, B. & Striplas, T. (2016), *Recommends For You: Netflix Award and Algorithmic Culture Production*, *New Media and Society*, 18 (1), 117-137. <https://doi.org/10.1177/1461444814538646>
- Ho, CH (2022). More than just fun and making friends: Social leisure and leisure experiences of Taiwanese urban women. *Journal of Leisure Studies*, 53 (4), 556-574. <https://doi.org/10.1080/00222216.2022.2073189>
- Hunting, K., Gray, J., & Johnson, D. (2018). *From Networks to Netflix: The Channel Switching Guide*.

- Kızılcelik, S. (1994). *Theories of Sociology* (1st ed.). Yunus Emre Publishing.
- Lincoln, Y.S. (2009). Ethical practices in qualitative research. In D.M. Mertens & P.E. Ginsberg (Ed.), *The handbook of social research ethics*. Los Angeles, CA: Sage. <https://doi.org/10.4135/9781483348971.n10>
- Liu, L. (2011). An international graduate student's ESL learning experience beyond the classroom. *TESL Canada Journal*, 77–92. <https://doi.org/10.18806/tesl.v29i1.1090>
- Lobato, R. (2018). Rethinking research on international TV streams in the age of Netflix. *Television and New Media*, 19 (3), 241-256. <https://doi.org/10.1177/1527476417708245>
- Manicas, P. T. (2009). Realist metatheory and qualitative methods. *Sociological Analysis*, 3(1), 31-46.
- Matrix, S. (2014). The Netflix influence: Teens, binge-watching and on-demand digital media trends. *Jeunesse: youth, texts, cultures*, 6 (1), 119-138. <https://doi.org/10.3138/jeunesse.6.1.119>
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.
- Mutlu, E. (1999). *Television and society*. Ankara: TRT Broadcasts.
- Nowell, L.S., Norris, J.M., White, D.E., & Moules, N.J. (2017). Thematic analysis. *International Journal of Qualitative Methods*, 16 (1), <https://doi.org/10.1177/1609406917733847>
- Oliver, M.B. (2020). Individual Differences in Media Effects. *Media effects: Advances in Theory and Research*, 2, 507-524.
- Öz, N. D., & Üstün, F. (2022a). Investigation of the relationship between university students' mobile game motivations and their loneliness levels. *Students' Physical Education*, 26(4), 196-206. <https://doi.org/10.15561/20755279.2022.0405>
- Öz, N. D., & Üstün, F. (2022b) Are We Playing Mobile Games Because We Are Bored? An Exploratory Study on University Students. *Mediterranean Journal of Sport Sciences*, 5(3), 636-650.
- Özel, S. (2020). Netflix Influence in the Age of Video On Demand Services. *Man and man*, 7(26), 115-138. <https://doi.org/10.29224/insanveinsan.786938>
- Özsefil, İ. (2019). Oscar-Nominated Netflix Originals. <https://www.filmloverss.com/oscar-adayligi-elde-etmis-netflix-orijnalleri/>, Accessed on March 30, 2023.
- Parker, G., Alstyn Van, M. W., & Choudary, S. P. (2016). *The platform revolution: How connected markets are transforming the economy and making it work for you*. New York: W. W. Norton.
- Patton, M.Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Ramasoota, P., & Kitikamdhorn, A. (2021). The "Netflix effect" in Thailand: Industry and regulatory practices. *Telecommunications Policy*, 45 (7), 102156. <https://doi.org/10.1016/j.telpol.2021.102156>
- Toffler, A. (2022). *Powershift: Knowledge, wealth and power at the edge of the 21st century*. Small.
- Varela, D., Kaun, A. (2019) *The Netflix Experience: A User-Focused Approach to the Netflix Recommendation Algorithm* In: Theo Plothe, Amber M. Buck (ed.), *Netflix at the Nexus: Content, Practice, and Production in the Age of Streaming Television* (pp. 197-211). New York: Peter Lang Publishing Group
- Yeğin, B.C. (2021). Discourses of racism. Critical analysis of the 'Elite' TV series. *OPUS International Journal of Society Studies*, 17 (34), 1487-1521. <https://doi.org/10.26466/opus.816234>
- Yıldırım, A. & Şimşek, H. (2013). *Qualitative research methods in the social sciences*. (9th Edition). Ankara: Seçkin Publishing.

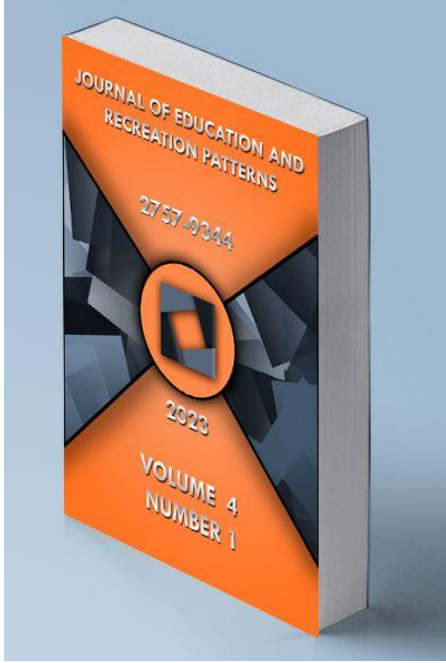
Copyright: © 2023 (Öz, N.D.& Ari, A.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

Examining ESL Preservice Teachers' Personal Factors That Best Predict Their Confidence to Integrate Technology in Future Classrooms

Mohamed IBRAHIM¹, Mevlüt AYDOĞMUŞ²

To cite this article:

Ibrahim, M. & Aydoğmuş, M. (2023). Examining ESL Preservice Teachers' Personal Factors That Best Predict Their Confidence to Integrate Technology in Future Classrooms. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 134-152. DOI: <https://doi.org/10.53016/jerp.v4i1.127>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Mohamed Ibrahim, Arkansas Tech University, mibrahim1@atu.edu, <https://orcid.org/0000-0003-4618-2463>

² Mevlüt Aydoğmuş, Necmettin Erbakan University, maydogmus@erbakan.edu.tr, <https://orcid.org/0000-0003-1286-2970>

Examining ESL Preservice Teachers' Personal Factors That Best Predict Their Confidence to Integrate Technology in Future Classrooms

Mohamed IBRAHIM¹, Mevlüt AYDOĞMUŞ²

ARTICLE INFORMATION

Original Research Paper

Received 01.05. 2023

Accepted 16.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 134-152

ABSTRACT

This study was designed to examine preservice teachers' personal characteristics that can predict their confidence to integrate technology in their teaching practices. The investigators used a questionnaire designed based on Bandura's Social Cognitive Theory to ask 168 ESL preservice teachers enrolled in the English Department in a public university located in central Anatolia. The results of this study found that the use of technology during ESL preservice teachers' training was the most significant predictor of their self-efficacy to integrate technology in their teaching practices, then followed by the number of years they are attending the education training and finally their learning preferences such as the use of multimedia and digital materials. The results of this study also found that ESL preservice teachers' gender and age were insignificant causes for building their confidence to integrate technology. The study also has found that there is a significant relationship between ESL preservice teachers' use of technology and their levels of self-efficacy and this relationship was strong and positive. These findings indicate that prior experience with technology among preservice teachers is a key component in determining their confidence in integrating technology into teaching and learning. The study offers vital insights into how teacher education programs might effectively prepare ESL preservice teachers for technology integration. Teacher education programs should prioritize chances for preservice teachers to obtain practical experience using technology in classroom settings. Finally, the investigators provide interpretation and recommendations based on these findings.

Keywords: ESL, Personal Factors, Preservice Teachers, Self-Efficacy, Technology Integration



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

The pandemic of COVID-19 has hastened the use of technology in many parts of our lives, including schooling. The integration of technology in education has been swift and unprecedented, with remote and hybrid learning becoming the norm. Technology has transformed the way we learn and teach, from online classes to digital textbooks and interactive learning tools. As time goes on, it is evident that technology will continue to play an important part in education, and educators and students must adapt and accept these changes in order to remain competitive in an increasingly digital world. Therefore, preservice teachers spend considerable time during their training to learn, use and evaluate wide variety of technology tools and applications to prepare to use in their future classrooms.

Additionally, many studies reported that students who used technology in their learning showed significant improvements in their test scores compared to those who did not use technology (e.g., Kompen et al., 2019; Soboleva & Karavaev, 2020; Yang & Baldwin, 2020). According to Lachner et al. (2021), technology integration not only improves student learning outcomes but also enhances preservice teachers' pedagogical content knowledge and teaching efficacy. Many research also found that integrating technology in teaching and learning can provide opportunities for active and engaged learning, personalized instruction, and collaboration among students and teachers (Krouska et al., 2022). Furthermore, technology integration found to encourage preservice teachers to master skills required for future workplace such as creativity, adaptability critical thinking, communication, and problem-solving, which are essential for success in today's society (e.g., Karagözoğlu & Karagözoğlu, 2017; Kelentrić et al., 2017; Mishra et al., 2009; Oztemel & Gursev, 2020; Teo et al., 2021).

Preservice teachers are normally trained during their university years in the practical use of technology to prepare them for the demands of modern classrooms. In the context of technology integration, research found that teachers with higher levels of self-efficacy in using technology are more likely to implement it effectively, leading to improved student outcomes (e.g., Lauermaann & ten Hagen, 2021). Thus, examining preservice teachers' self-efficacy in using technology in teaching and learning can inform teacher education programs and facilitate the development of effective strategies for enhancing teachers' technology integration skills.

Recent research has highlighted the importance of technology integration during preservice teachers educational training. For example, studies found that preservice teachers who participated in technology integration courses demonstrated higher levels of technology skills, led to improvement in their learning outcomes and reported increased confidence in their ability to use technology in the classroom (e.g., Baek & Sung, 2020; Wang & Zhao, 2021). There is a general agreement between scholars that preservice teachers' self-efficacy in using technology is an essential factor that can impact the quality of technology integration (e.g., Baek & Sung, 2020; Wang & Zhao, 2021; Wilson et al., 2020). Given the importance of the topic of preservice teachers' self-efficacy to integrate technology in their teaching and learning, this study is examining preservice teachers' personal factors that best predict their confidence to integrate technology in their future classrooms.

LITERATURE REVIEW

Preservice teachers' self-efficacy to integrate technology is a widely researched topic. However, the current literature review will briefly address the main variables included in this study.

Self-efficacy

The term self-efficacy applies to individuals' belief in their ability to organize and carry out the required activities to achieve a particular goal or objective. According to Bandura (1986), self-efficacy is a type of self-assessment that has an impact on the determination of one's actions, the degree of effort and persistence exerted when confronting challenges, and ultimately, the attainment of proficiency in a given behavior. Therefore, an individual's confidence in their own self-efficacy directs their emotions, cognitive processes, drive, and actions. Bandura's self-efficacy theory proposes that individuals' beliefs about their abilities to complete specific tasks or activities represent central role in their motivation, behavior, and achievement. There are four major motives of self-efficacy beliefs: First, mastery experiences (cognitive processes): Successful experiences in performing tasks or activities increase individuals' self-efficacy beliefs, while unsuccessful experiences decrease them. Second, vicarious experiences (cognitive processes): Observing others' successes or failures in similar tasks or activities can influence individuals' self-efficacy beliefs. Third, social persuasion (motivational processes): Verbal encouragement or discouragement from others can impact individuals' self-efficacy beliefs. Finally, physiological and affective states (affective processes): Physical and emotional states, such as anxiety or stress, can influence individuals' self-efficacy beliefs. Therefore, having a strong sense of self-efficacy leads to greater accomplishments.

Many studies have investigated factors that could influence preservice teachers' self-efficacy to integrate technology in teaching and learning, such as their past use of technology, perceived convenience and usefulness of using technology, attitudes towards it, support for integrating technology in lesson planning, and participating in authentic learning activities, among others. These factors found to significantly predict preservice teachers' self-efficacy beliefs to integrate technology differently. For instance, preservice teachers with prior technology experience tend to have higher self-efficacy in using technology, while those with negative attitudes towards technology may have lower self-efficacy. Research found that preservice teachers who engaged in lesson planning practice with technology or in authentic learning exercises involve the use of technology showed a significant increase in their self-efficacy for technology integration and greater intentions to integrate technology in their future classrooms compared to those who did not (e.g., Anderson et al., 2011; Ata & Cevik, 2019; Banas & York, 2014; Giles & Kent, 2016; Lee & Lee, 2014; Ndlovu et al., 2020; Ngidi & Ngidi, 2019). Therefore in an increasingly diverse global society, it is essential to grasp the tools necessary for fostering an open and inclusive mindset (Kim et al., 2022).

Studies also investigated preservice teachers' engagement with the use of technology during training indicate the significance of teacher education courses in enhancing their knowledge and skills regarding technology integration. For example, many studies indicate that teacher education courses that explicitly address technology integration effectively improve preservice teachers' knowledge and skills in this area. Therefore, many studies suggest that education courses should focus on improving preservice teachers' opinions regarding the use of technology to increase their desire to use it in their future teaching practices (e.g., Sadaf et al., 2016). Preservice teachers' prior technology use is one of the factors that predict their self-efficacy to use technology in teaching and learning. Many studies have investigated the relationship between teachers' self-efficacy in using technology and their actual technology

integration practices. For example, studies found that self-efficacy in technology integration was positively correlated with teacher experience with technology, teacher beliefs about technology integration, and teacher perceptions of school support for technology integration (e.g., Barton & Dexter, 2020; Gomez et al., 2022; Kwon et al., 2019; Yildiz Durak, 2021). For instance, Zhang et al. (2023), found that preservice teachers' technology integration self-efficacy beliefs are positively related to their technology competencies. Specifically, preservice teachers who had higher levels of technology integration self-efficacy beliefs were more likely to engage in online self-regulated learning strategies, which in turn was related to their higher levels of technology competencies.

Research also reported that prior technology experience can positively influence preservice teachers' self-efficacy in using technology (Rowston et al., 2022). Preservice teachers who have had more experience with technology are likely to have higher self-efficacy in using technology, as they are more familiar with the tools and have had more opportunities to experiment with them. On the other hand, preservice teachers with limited or no prior technology experience may feel overwhelmed or anxious about using technology, which could negatively affect their self-efficacy. Finally, research examined preservice teachers' gender and age as factors affect their self-efficacy and found conflicting results. For example, while few studies found that there are differences in preservice teachers' self-efficacy technology and digital skills based on their gender or age (e.g., Andreasen et al., 2022; Guillén-Gámez et al., 2019; Šabić et al., 2022; Yoon, 2022), other studies found that there were no significant differences of preservice teachers' technology skills based on their gender or the number of college years (e.g., Aslan, 2021; Günbatar & Bakırcı, 2019; Putra et al., 2022; Walker et al., 2020).

The Purpose of the Research: This study attempted to examine preservice teachers' personal factors that best predict their confidence to integrate technology in teaching and learning, such as the level of technology use, gender, learning preferences, years in college and age on their level of confidence to integrate technology in teaching and learning. Additionally, this study examined factors that predict preservice teachers' self-efficacy to use technology in teaching and learning.

The Research Questions: Given the prior research regarding preservice teachers' self-efficacy and use of technology, this investigation will be directed by the following inquiries:

1. Is there a correlation between preservice teachers' use of technology and their self-efficacy to integrate technology in teaching and learning?
2. Is there a correlation between preservice teachers' use of technology and their years attending educational training?
3. Is there a significant difference between preservice teacher's male and female in using technology and their self-efficacy to integrate technology in teaching and learning?
4. What factors best predict preservice teachers' self-efficacy to integrate technology in their future classroom?

This study proposed and tries to answer these questions because many prior studies highlight the importance of studying preservice teachers' self-efficacy and its role in their use of technology in teaching and learning.

The investigators of this study attempted to answer four questions around the topic preservice teachers' self-efficacy. The first question was proposed to investigate the relationship between preservice teachers' use of technology and their belief in their ability to integrate technology in their teaching practice. This question was based on prior research's

recommendations to study the relationship between these two characteristics to help instructors and practitioners to design effective technology courses for preservice teachers.

In the second question, investigators attempt to explore the relationship between preservice teachers' usage of technology and the number of years they spend in educational training. This research question is important because much prior research found that that duration of the educational training and the intentional modeling of technology during educational training can affect preservice teachers' willingness to use technology in their future classroom, and it is critical to determine whether or not this impact is related to the amount of time spent in training.

The investigators also proposed the third question to determine whether there is a significant difference in male and female preservice teachers' usage of technology and self-efficacy to use technology in their future classroom. This question is also considered important because prior studies have large discrepancies in their findings regarding the influence of gender on preservice teachers' technology use.

Finally, in the fourth question, the investigators tried to identify the most important factors that may best predict preservice teachers' self-efficacy to use technology in the future classroom. This question is based on the need to identifying critical factors that boost preservice teachers' technology integration self-efficacy, which can eventually lead to better classroom results for children.

STUDY CONCEPTUAL FRAMEWORK

This study's conceptual framework provides a model based on preservice teachers' traits that may influence their self-efficacy to integrate technology in their future classrooms. The model comprises four independent variables: gender, age, college years, and learning preferences, as well as two dependent variables: preservice teachers' level of technology use and their self-efficacy to integrate technology in teaching and learning. The conceptual framework of the study is depicted visually in Figure 1.

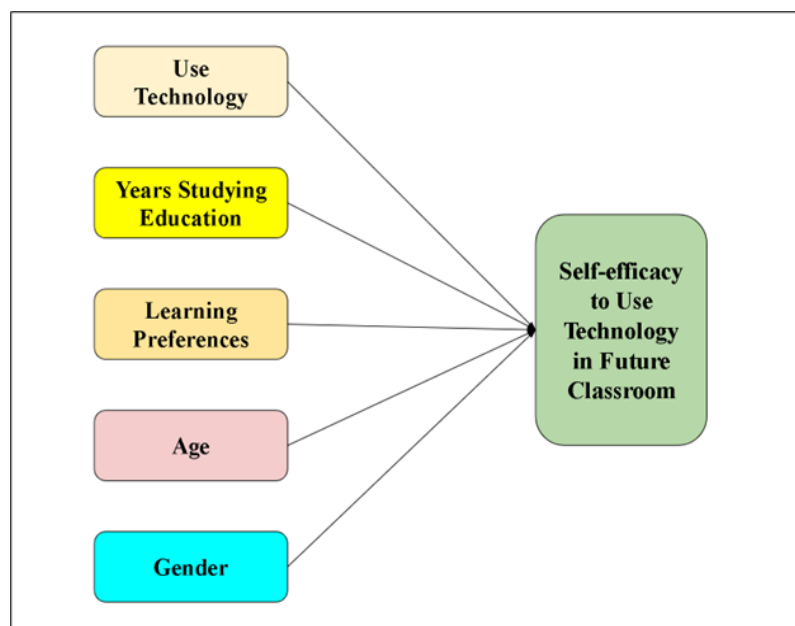


Figure 1: Study proposed conceptual framework.

METHOD

An exploratory study was undertaken by the researchers to investigate the association between preservice teachers' self-efficacy in using technology for teaching and learning. A Likert scale questionnaire was used to collect data from students enrolled in an educational program at a Turkish public university in the Central Anatolia region at the start of the spring semester of 2023. The questionnaire was developed to assess preservice teachers' self-efficacy and amount of technology use in teaching and learning. The study contained five independent variables: gender, age, college years, learning preferences, and level of technology use, as well as one dependent variable, preservice teachers' self-efficacy to integrate technology into teaching and learning. The survey questionnaire had two parts: the first portion examined preservice teachers' frequency of technology use, and the second part rated their self-efficacy in utilizing technology for teaching and learning.

Measures: The instrumentations consisted of the following items: students' demographic, 9-questions survey with 10-level Likert scale to assess student's self-efficacy and 12-question survey with 5-Likert scale to assess their use of technology in learning.

Demographic Survey: The researchers created a demographic survey to solicit information about the participants' makeup such as learning preferences, gender, age, and years in college.

Self-efficacy Survey: The researchers developed a survey with nine questions to ask students about their confidence to integrate technology in their future classrooms based on Bandura (1997). This survey deployed at the first week of the semester. An example of a Likert-scale question: How certain that you can use technology to locate, evaluate, and collect information from a variety of sources. The question asks students to rate their degree of confidence between number from zero to 100 (0 = Cannot do at all, and 100 = Highly certain can do).

Self-efficacy Survey Content and Construct Validity: The researchers used a scale that was tested with other college students in different courses and in several previous studies (e.g., Ibrahim & Callaway, 2018). The construct validity of the scales was ensured through positive and significant correlations of it items. The Cronbach's alpha internal consistency reliability was 0.92.

Participants: The present study included 168 preservice teachers. Students were enrolled in the following courses in the English Department: World Englishes and Culture (two sections), Oral Communication Skills II (three sections), Listening and Pronunciation (three sections), and Second Language Acquisition (two sections). Descriptive statistics were performed on a dataset of 168 students to provide a summary of their gender, years in college, students level of using technology, age, and learning preferences. There were 167 valid observations for each variable, with 2 missing observations for gender and years in college, and 1 missing observation for the other variables.

The mean gender score was 1.75, indicating that most of the students were female. The mean years in college score was 2.28, suggesting that most students were in their second or third year of college. The mean score for the total number of students who use technology well was 1.46, indicating that most students were proficient in using technology. The mean age score was 43.11, indicating that the students were mostly between 18-21 years old. The mean score for learning preferences was 4.43, indicating that most students preferred a mixture of visual, auditory and reading learning materials.

While preservice teachers' gender was .432 standard deviation, with the number of female higher than male, their years in college was 1.187 standard deviation, indicating a

higher number of senior students participated in this study. Participants' use of technology standard deviation was .854, signifying some variability in the students' proficiency with technology. The standard deviation for age was 7.690, indicating that there was a significant amount of variability in the students' ages. The standard deviation for learning preferences was 1.726, suggesting that there was some variability in the students' preferences for learning preferences.

The standard error of skewness for all variables was .188, indicating that the estimates of skewness were reliable. The standard error of kurtosis for all variables was .374, indicating that the estimates of kurtosis were reliable. In summary, these descriptive statistics revealed that most students were female, in their second or third year of college, proficient with technology, mostly between 18-21 years old, and preferred a mixture of learning preferences. Table 1. summarizes students' descriptive statistics.

Table 1. Descriptive Statistics of Participants' Gender, Years in College, Level of Technology Use, Age and Learning Preferences

	Gender	Years College	Favor Technology	Age	Learning preferences
Participants	167	167	168	168	168
Mean	1.75	2.28	43.11	1.46	4.43
Std. Deviation	.432	1.187	7.690	.854	1.726
Skewness	-1.193	.554	-.648	2.214	-.390
Std. Error of Skewness	.188	.188	.187	.187	.187
Kurtosis	-.583	-.939	1.449	4.813	-1.529
Std. Error of Kurtosis	.374	.374	.373	.373	.373
Sum	293	381	7243	246	745

The researchers used a convenient sample strategy, and the participants were chosen based on their attendance at the English Department, as well as their accessibility and willingness to complete the surveys. Despite the fact that convenient sampling does not entail a random selection procedure, the researchers took the following steps to improve the study's reliability and generalizability: First, the researchers stated the inclusion and exclusion criteria clearly: All students enrolled in the following English Department courses were included in the study: World Englishes and Culture (two sections), Oral Communication Skills II (three sections), Listening and Pronunciation (three sections), and Second Language Acquisition (two sections). Furthermore, the participants in this study are representative of the population that the researchers are interested in. As a result, the people we chose are relevant to our research. Second, the researchers employed a consistent recruiting approach to verify that all participants were recruited in the same manner. As a result, we reduced the possibility of bias in the selection process. Third, the researchers employed a sufficiently big sample size. The researchers were successful in recruiting a big enough sample size to aid boost the study's dependability, limit the impact of random variation in the data, and raise the generalizability of the conclusions. Finally, the researchers conducted statistical analysis. Test the validity of your findings using appropriate statistical analysis. This might help to guarantee that your results are not the result of chance or data bias.

Procedure

Preservice teachers participated in this study were enrolled in advanced English courses. Participants in all sections completed survey addressing their demographics, level of using technology and their confidence to use technology in their future classroom. The survey was deployed at the beginning of the semester.

FINDINGS

Data preparation: The researchers scanned the data for Prior to the main analyses, data were screened for missing data and found that there were small number of cases and no apparent patterns emerging.

Research question 1: Is there a correlation between preservice teachers’ use of technology and their self-efficacy to integrate technology in teaching and learning?

The researchers answered the first question by conducting a Pearson correlation analysis to examine the relationship between the level of the use of technology and the self-efficacy scores among preservice teachers. The correlation coefficient between the level of technology use and self-efficacy scores was statistically and practically significant, $p < .001$, $r = .642$, indicating a strong positive correlation between the use of technology and the self-efficacy scores among preservice teachers. This suggests that as the level of technology use increases, self-efficacy scores of preservice teachers also tend to increase. Tables 2. and 3. summarize correlation coefficient results.

Table 2. Descriptive Statistics of the Level of Technology Use and Self-Efficacy Scores

	Mean	Std. Deviation	n
Students’ Technology Use	43.11	7.690	168
Students’ Self-Efficacy	564.58	137.970	168

Table 3. Correlations Coefficient Between the Level of Technology Use and Self-Efficacy Scores

		Technology Use	Self-Efficacy
Students’ Technology Use	Pearson Correlation	1	.642**
	Sig. (2-tailed)		.000
	Sum of Squares and Cross-products	9876.851	113782.917
	Covariance	59.143	681.335
	n	168	168

**Correlation is significant at the 0.01 level (2-tailed)

Research question 2: Is there a correlation between preservice teachers’ use of technology and their years attending educational training?

The second question was addressed by examining the relationship between preservice teachers’ level of technology use and their years in college. The result of Pearson correlation coefficient between the two variables was statistically and practically significant with $p < .01$, $r = .194$, indicating a strong and positive correlation between the two variables and suggests

that as preservice teachers' years in college increase the level of technology use also tend to increase. Tables 4. and 5. summarize correlation coefficient results.

Table 4. Descriptive Statistics of the Level of Technology Use and Preservice Years in College

	Mean	Std. Deviation	n
Years College	2.28	1.187	167
Technology Use	43.11	7.690	168

Table 5. Correlations Coefficient Between the Level of Technology Use and Preservice Years in College

		Years College	Technology Use
Years College	Pearson Correlation	1	.194*
	Sig. (2-tailed)		.012
	Sum of Squares and Cross-products	233.772	294.497
	Covariance	1.408	1.774
	n	167	167

*Correlation is significant at the 0.05 level (2-tailed)

Research question 3: Is there a significant difference between preservice teacher's male and female in using technology and their self-efficacy to integrate technology in teaching and learning?

The researchers answered the third question by conducting a one-way ANOVA. Prior to the analysis, assumptions of the ANOVA were checked for normality, homogeneity of variance, and independence (Shapiro-Wilk test for normality and the Levene's test for homogeneity of variance) and sufficient sample size in order to produce reliable results.

Normality of the dependent variable was assessed using the Shapiro-Wilk test ($W = 0.96, p = 0.35$), which indicated that the assumption of normality was met. Homogeneity of variance was assessed using Levene's test ($F(2, 57) = 1.23, p = 0.30$), which indicated that the assumption of homogeneity of variance was met. Additionally, independence of observations was assumed as participants were randomly between sections.

A one-way ANOVA was conducted to determine if there were significant differences in self-efficacy and level of technology use between male and female students. For self-efficacy, the results showed that there was no significant difference between males and females ($F(1, 66.606) = 0.503, p = .480$). For level of technology use, the results also showed no significant difference between males and females ($F(1, 62.501) = 1.341, p = .251$). Overall, the results suggest that there were no significant differences in self-efficacy and level of technology use between male and female students. Table 6. summarizes the one-way between subject's ANOVA.

Table 6. One-Way between Subject's ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Students' Self-Efficacy	Between Groups	9887.739	1	9887.739	.516	.474
	Within Groups	3161743.399	165	19162.081		
	Total	3171631.138	166			
Students' Technology Use	Between Groups	88.543	1	88.543	1.493	.224
	Within Groups	9788.296	165	59.323		
	Total	9876.838	166			

Research question 4: What factors best predict preservice teachers' self-efficacy to integrate technology in their future classroom?

The researchers answered the fourth question by conducting Multiple Regression analysis to test the proposed model and to estimate the effect of independent variables on a dependent variable.

Following the rule that the sample size required for a regression analysis with multiple independent variables that the sample size should be at least 10-20 times the number of independent variables in the model, to ensure that the estimates of the regression coefficients are stable and reliable. Therefore, for a regression analysis with 5 independent variables, a reasonable minimum sample size would be at least 60-120 observations. However, this is only a general guideline.

Multiple Regression Assumptions: First, researchers checked the multicollinearity assumption between predictor variables through the data tables output and found that correlations between variables were less than 0.6. Therefore, the multicollinearity assumption was met. Further, all predictor variables found to be correlated with the dependent variable at a value greater than 0.3. Second, the scatter and probability plots were checked and found that the regression standardized residual between -3 to 3 and the linear relationship between the independent variables and the dependent variable were following a straight line. Third, the standard residual was between -3.109 and 2.455. Fourth, Cooks Distance was checked and found between .000 and less than 1. Fifth, ANOVA table was checked and found statistical significance difference and therefore the researchers reject the null hypothesis that the regression slope is 0. Finally, since this study has adequate sample size (168 participants), the researchers used the R-square. The data normality was checked through examining the histograms and normality plots and found that all variables were normally distributed. Finally, the Kolmogorov-Smirnov test confirmed that none of the variables differs from normality at the 0.05 significance level.

Multiple Regression analysis: Regression finding: The researchers conducted multiple linear regression analysis to examine the proposed model to predict preservice teachers' self-efficacy to integrate technology in their future classrooms. The predictor model was able to account for 46% of the variance in the dependent variable and was statistically significant at $p < .000$. Individual predictors were examined further, and the result indicated that the variables technology use, years college and learning preferences found to be a significant predictor of ($t = 10.038, 2.589, \text{ and } 2.447, p = .05$).

The standardized coefficients (Beta) were examined to identify the relative contribution of each variable to the model. The data revealed that the most important variable contributed to the model was preservice teachers' technology use, with a Beta coefficient of .602, followed by years in college with a Beta coefficient of .163. learning preferences and age also have significant Beta coefficients of .143 and .063, respectively. Gender has the smallest Beta coefficient of .013, indicating that it has the least impact on preservice teachers' self-efficacy. Basic descriptive statistics and regression coefficients summarized in Tables 7. and 8. and Figure 2.

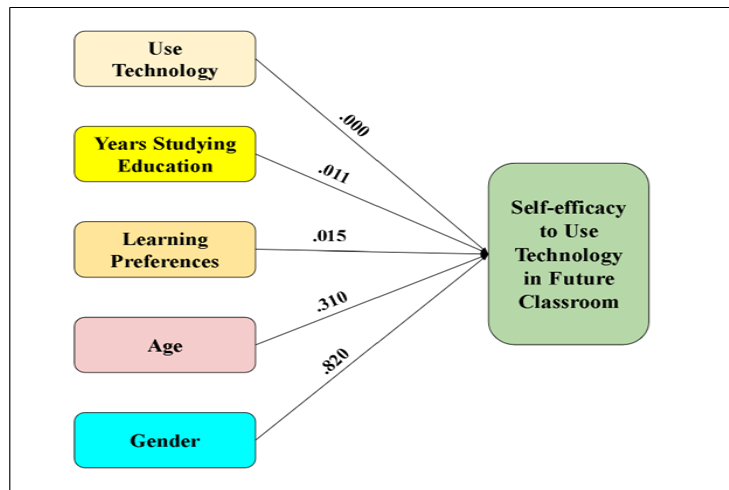


Figure 2: Multiple Linear Regression Finding.

Table 7. Multiple Linear Regression Analysis Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Sig. F Change	
					R Square Change	F Change	df1		
	.681 ^a	.463	.447	102.839	.463	27.627	5	160	.000

Note: a. Dependent Variable: Students' Self-Efficacy

Table 8. Multiple Linear Regression Analysis Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta	t		Zero-order	Partial	Part	Tolerance	VIF
(Constant)	-17.750	64.530		-.275	.784					
Technology Use	10.759	1.072	.602	10.038	.000	.643	.622	.581	.933	1.072
Age	10.170	9.991	.063	1.018	.310	.094	.080	.059	.873	1.145
Years College	18.977	7.331	.163	2.589	.011	.284	.201	.150	.842	1.187
Learning Preferences	11.590	4.737	.143	2.447	.015	.173	.190	.142	.976	1.025
Gender	4.287	18.778	.013	.228	.820	-.059	.018	.013	.971	1.029

Significant at $p < .001$, b. Dependent Variable: Students' self-Efficacy

Predictors: (Constant), Gender, Years College, Learning Preferences, Students' Technology Use, Age

DISCUSSION

Grounded in Bandura's Social Cognitive Theory, this study examined preservice teachers' personal factors in relation to their confidence to integrate technology in future classrooms. The purpose of this study was to investigate the relationship of five variables on preservice teachers' level of confidence to integrate technology, including gender, age, learning preferences, years in college and their level of technology use.

The first question investigated the relationship between preservice teachers' use of technology and their self-efficacy to integrate technology in teaching and learning. The result of the first question indicated that there is a strong and positive correlation between preservice teachers' level of the use of technology and their self-efficacy to integrate technology in

teaching and learning. Specifically, the finding of this present study indicated that preservice teachers' self-efficacy to integrate technology is significantly and positively associated with their levels of technology use. This result found to be consistent with previous research that there are strong and positive correlations between preservice teachers' use of technology and their self-efficacy. For example, several studies found that the preservice teachers' self-efficacy beliefs were significantly affected by their level of technology use and that preservice teachers who are using technology regularly have more confidence to integrate technology in their future classroom (e.g., Jenßen et al., 2021; Jin & Harp, 2020; Kent & Giles, 2017).

A possible interpretation of this finding is that engaging preservice teachers in the use of technology during educational training allow them to gain a better understanding of how technology can be used in the context of a classroom. Further, the frequent use of technology in their daily coursework result in enhancing their experience of using different technology tools and applications in the context of learning. Consequently, the use of technology helps preservice teachers to develop the skills and confidence in their ability to integrate technology effectively in future classroom. This interpretation found to be consistent with findings from previous research indicated that the increase level of technology use during educational training is associated with higher levels of self-efficacy among preservice teachers (e.g., Kent & Giles, 2017).

The second question investigated the relationship between preservice teachers' years attending their educational program and their level of using technology. The result of the second question indicated that there is a strong and positive correlation between preservice teachers' years attending their educational program and their level using technology. Specifically, the finding of the second question indicated that the higher levels of use of technology in teaching and learning among preservice teachers is significantly and positively associated with the duration of attending educational training. This result found to be consistent with previous research indicating that the preservice teachers' level of using technology is significantly affected by the training they receive during attending educational program. For example, studies found that providing training and resources on the use of technology to preservice teachers would promote its usefulness, enhance their learning experiences and consequently would positively increase their intention to use technology in education (e.g., Bower et al., 2020; Caliskan et al., 2019; Dalinger et al., 2020). During the semester of conducting the study, students used a wide variety of technological tools for their weekly course work, such as educational games, mobile apps, multimedia, and web creations. Due to the frequent use and the hands-on experiences with technology, preservice teachers had opportunities to learn new skills, see how technology can be used to enhance students' learning, and were more likely to feel confident in their ability to use technology in the classroom.

The extended utilization of technology tools and applications during educational training may lead to a greater understanding and appreciation of the potential benefits of technology, which in turn may increase their use of technology in the classroom. Additionally, educational programs would provide preservice teachers with more opportunities for hands-on practice and experimentation with technology in teaching and learning. This can help to enhance their interest, confidence and competencies in using technology, leading to higher levels of confidence to use of technology in their future classroom. This interpretation is supported by prior research that suggested that teacher education programs are effective in improving preservice teachers' competence in teaching readiness, particularly in terms of technology use and providing preservice teachers with opportunities to develop the use of technology skills to ensure their successful integration into classroom practice (Ersin et al., 2020; Tican & Deniz, 2019).

The third question in the present study investigated whether there is a difference between male and female preservice teachers in using technology and self-efficacy to integrate technology. The result of the third question showed that there is no difference between male and female in their use of technology or their self-efficacy to integrate technology in teaching and learning. The result of this question is also consistent with some earlier research that found no difference between male and female preservice teachers in using technology in learning and their self-efficacy to integrate technology in their future classrooms (e.g., Aslan, 2021; Günbatar & Bakırcı, 2019; Mouza et al., 2014; Putra et al., 2022; Walker et al., 2020). A possible interpretation of this finding is that many educational programs promote technology integration in teacher education training by providing equal access and opportunities to both genders. Consequently, male and female preservice teachers were provided equal training to integrate technology in their teaching and learning and therefore they benefited equally from this opportunity. Further, both male and female preservice teachers had similar levels of technology use and were able to enhance their self-efficacy to integrate technology equally.

The fourth question in this study investigated the proposed theoretical framework and the effect of preservice teachers' gender, age, years in college, learning preferences and the level of technology use on their self-efficacy to integrate technology in teaching and learning. First, the main finding of this question is that the goodness of fit of the proposed model was able to explain and capture 46% of the relationship between the preservice teachers' personal characteristics and the level of technology use and their self-efficacy to integrate technology. Simply put, the proposed model is able to predict the level of preservice teachers' self-efficacy with some accuracy, but there are other factors that can affect their self-efficacy that the model does not take into account. These factors could include the technology tools availability, the classroom infrastructure, or the students' access to different technology tools. Second, the result indicated that preservice teachers' technology use found to be the most significant predictor of their self-efficacy beliefs to integrate technology in their future classroom, followed by year of college and finally their learning preferences, while their age and gender found to be nonsignificant predictors. The results of this question found to be consistent with earlier research regarding preservice teachers' use of technology, years in college and the longer exposure of technology implementation during coursework, and learning preferences as significant predictors for their self-efficacy to integrate technology in their future classrooms (e.g., Anderson et al., 2011; Ata & Cevik, 2019; Giles & Kent, 2016; Ndlovu et al., 2020; Ngidi & Ngidi, 2019).

There are several possible interpretations for the findings of the fourth question. First, the use of technology tools and applications in a variety of contexts during educational training would possibly expose preservice teachers to rich experience with technology. This experience would help them to develop confident towards using technology. Consequently, the positive attitude would translate into enhancing their confidence to integrate technology in their own classrooms. Second, the longer preservice teachers stayed in their educational program, the more they get exposed to practical experience with technology, such as field placements, student teaching, or other classroom experiences. As they progress through their education programs, they would have more opportunities to learn about the use of technology in various settings and context. Thus, preservice teachers have a better opportunity to develop technological knowledge, leading to improvement in their self-efficacy beliefs about integrating technology in their future classrooms. Finally, the participants in this study were seniors in their prospective programs and they indicated that their learning preferences is a mixed method between using lectures, discussions, written material, hands-on activities, and collaborative group work. As such, preservice teachers participated in this study were able to select and being exposed to wide range of learning materials through utilizing variety of technological tools during attending the educational program. As a result, their learning

preferences helped them try out wide variety of technological tools, leading to be more confident in their ability to integrate technology effectively in their future classrooms.

Recommendations

The findings of this study propose few recommendations regarding preparing preservice teacher to use technology in their future classrooms. First, it was clear that utilizing the use of technology tools and application during preservice teachers educational training improved their interest, competencies and self-efficacy to use technology in their own classrooms. Therefore, it is recommended to increase the level of technology use throughout their educational courses in order to enhance their self-efficacy to integrate technology in their future classrooms. Additionally, it may be beneficial for preservice teachers to model the use of technology, not just in one course, but throughout the training programs in order to increase their level of technology use in teaching and learning. Furthermore, the study found no significant difference between male and female preservice teachers in their use of technology or self-efficacy to integrate technology in teaching and learning, suggesting that gender should not be a factor when considering the implementation of technology in teacher education programs. Regarding the proposed framework, it may provide researchers with a useful tool to better understand the relationship between preservice teachers' personal characteristics and their self-efficacy regarding integrating technology in teaching and learning. Although the researchers used many technological tools during implementing this study, there are other technology tools that can be used in future study, such as the use of immersive technology, and 3d simulation software. These new technology tools can be used to help students to develop their critical thinking skills. Additionally, future research can focus on the use of technology tools to help students to collaborate with their peers on projects and assignments. This can be used to assess students' ability to learn from each other and their communication skills. Finally, the findings of the present study reiterate the importance of preservice teachers' experiences with technology during their training programs in shaping their self-efficacy beliefs regarding the use of technology in their future classrooms. These factors should be taken into account in teacher education programs to support the development of preservice teachers' technology integration skills and confidence.

Limitations

Although this study gave important insights into the relationship between personal variables and preservice teachers' self-efficacy to integrate technology in teaching and learning, numerous limitations must be addressed. For starters, the study's sample size was tiny, and it may not be indicative of all preservice instructors. Second, because the data were collected at a single point in time, no causality can be derived from this study's cross-sectional methodology. A longitudinal approach could be used in future research to evaluate how the associations between the variables develop over time. Third, the study relied on self-report measures, which are susceptible to response and social desirability biases. Normally, people tend to answer questions in a way that makes them look good and inflates their confidence and their abilities. To validate the outcomes of this study, future research could use more objective measures of technology use and self-efficacy. Finally, because this study was conducted in a single educational institution, the findings may not be generalizable to other educational institutions. Future research should look into the relationship between personal variables and preservice teachers' self-efficacy to use technology in teaching and learning in other educational settings.

Acknowledgments

The authors would like to thank everyone who participated in this study and helped us to shed light on a very important issue related to educational training. We are grateful for the time and effort that you all gave to this project. We are grateful for all of the help that we received in the preparation of this manuscript.

REFERENCES

- Anderson, S. E., Groulx, J. G., & Maninger, R. M. (2011). Relationships among Preservice Teachers' Technology-Related Abilities, Beliefs, and Intentions to Use Technology in Their Future Classrooms. *Journal of Educational Computing Research*, 45(3), 321-338. <https://doi.org/10.2190/EC.45.3.d>
- Andreasen, J. K., Tømte, C. E., Bergan, I., & Kovac, V. B. (2022). Professional digital competence in initial teacher education: An examination of differences in two cohorts of pre-service teachers. *Nordic Journal of Digital Literacy*(1), 61-74. <https://doi.org/10.18261/njdl.17.1.5>
- Aslan, S. (2021). Analysis of Digital Literacy Self-Efficacy Levels of Pre-Service Teachers. *International Journal of Technology in Education*, 4(1), 57-67. <https://doi.org/10.14742/ajet.362>
- Ata, R., & Cevik, M. (2019). Exploring relationships between Kolb's learning styles and mobile learning readiness of pre-service teachers: A mixed study. *Education and information technologies*, 24(2), 1351-1377. <https://doi.org/10.1007/s10639-018-9835-y>
- Baek, E.-O., & Sung, Y.-H. (2020). Pre-service teachers' perception of technology competencies based on the new ISTE technology standards. *Journal of Digital Learning in Teacher Education*, 37(1), 48-64. <https://doi.org/10.1080/21532974.2020.1815108>
- Banas, J. R., & York, C. S. (2014). Authentic learning exercises as a means to influence preservice teachers' technology integration self-efficacy and intentions to integrate technology. *Australasian Journal of Educational Technology*, 30(6). <https://doi.org/10.14742/ajet.362>
- Bandura, A. (1986). *Social foundations of thought and action : a social cognitive theory*. Prentice-Hall. <https://doi.org/10.1002/9780470586890>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W.H. Freeman. https://doi.org/10.1007/978-1-4625-0193-5_1
- Barton, E. A., & Dexter, S. (2020). Sources of teachers' self-efficacy for technology integration from formal, informal, and independent professional learning. *Educational Technology research and development*, 68, 89-108. <https://doi.org/10.1007/s11423-019-09861-y>
- Bower, M., DeWitt, D., & Lai, J. W. (2020). Reasons associated with preservice teachers' intention to use immersive virtual reality in education. *British Journal of Educational Technology*, 51(6), 2215-2233. <https://doi.org/10.1111/bjet.13009>
- Caliskan, S., Guney, Z., Sakhieva, R., Vasbieva, D., & Zaitseva, N. (2019). Teachers' views on the availability of web 2.0 tools in education. *International Journal of Emerging Technologies in Learning (iJET)*, 14(22), 70-81. <https://doi.org/10.1080/09686725.2018.1452233>
- Dalinger, T., Thomas, K. B., Stansberry, S., & Xiu, Y. (2020). A mixed reality simulation offers strategic practice for pre-service teachers. *Computers & Education*, 144, 103696. <https://doi.org/10.1016/j.compedu.2019.103696>
- Ersin, P., Atay, D., & Mede, E. (2020). Boosting preservice teachers' competence and online teaching readiness through e-practicum during the COVID-19 outbreak. *International Journal of TESOL Studies*, 2(2), 112-124. <https://doi.org/10.46451/ijts.2020.09.09>
- Giles, R. M., & Kent, A. M. (2016). An investigation of preservice teachers' self-efficacy for teaching with technology. *Asian Education Studies*, 1(1), 32.

- <https://doi.org/10.20849/aes.v1i1.19> Gomez, F. C., Trespalacios, J., Hsu, Y.-C., & Yang, D. (2022). Exploring teachers' technology integration self-efficacy through the 2017 ISTE Standards. *TechTrends*, 1-13. <https://doi.org/10.1007/s11528-021-00639-z>
- Guillén-Gámez, F. D., Lugones, A., & Mayorga-Fernández, M. J. (2019). ICT use by pre-service foreign languages teachers according to gender, age and motivation. *Cogent Education*, 6(1), 1574693. <https://doi.org/10.1080/2331186X.2019.1574693>
- Günbatar, M. S., & Bakırcı, H. (2019). STEM teaching intention and computational thinking skills of pre-service teachers. *Education and information technologies*, 24, 1615-1629. <https://doi.org/10.1007/s10639-018-9849-5>
- Ibrahim, M., & Callaway, R. (2018). Implications of Flipped Teaching Strategy on Preservice Teachers' Self-efficacy and Intention to Integrate Technology in Future Classroom. E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education. <https://doi.org/10.1080/15372987.2022.2079457>
- Jenßen, L., Gierlinger, F., & Eilerts, K. (2021). Pre-service teachers' enjoyment and ICT teaching self-efficacy in mathematics—an application of control-value theory. *Journal of Digital Learning in Teacher Education*, 37(3), 183-195. <https://doi.org/10.1080/21532974.2021.1929585>
- Jin, Y., & Harp, C. (2020). Examining preservice teachers' TPACK, attitudes, self-efficacy, and perceptions of teamwork in a stand-alone educational technology course using flipped classroom or flipped team-based learning pedagogies. *Journal of Digital Learning in Teacher Education*, 36(3), 166-184. <https://doi.org/10.1080/1359866X>
- Karagözoğlu, B., & Karagözoğlu, B. (2017). Technology and its aftermath. *Science and technology from global and historical perspectives*, 205-226. <https://doi.org/10.1080/09504987.2017.1394356>
- Kelentrić, M., Helland, K., & Arstorp, A.-T. (2017). Professional digital competence framework for teachers. *The Norwegian Centre for ICT in education*, 134(1), 1-74. <https://doi.org/10.2788/32880>
- Kent, A. M., & Giles, R. M. (2017). Preservice Teachers' Technology Self-Efficacy. *SRATE Journal*, 26(1), 9-20. <https://doi.org/10.1080/07391523.2013.836615>
- Kim, K., Pickett, A.C., Stokowski, S., & Han, J. (2022). Promoting Educational Outcomes Through Openness to Diversity: An Exploration of Sport and Physical Activity. *Journal of Education and Recreation Patterns (JERP)*, 3 (2),60-76. <https://doi.org/10.53016/jerp.v3i2.52>
- Kompen, R. T., Edirisingha, P., Canaleta, X., Alsina, M., & Monguet, J. M. (2019). Personal learning Environments based on Web 2.0 services in higher education. *Telematics and informatics*, 38, 194-206.
- Krouska, A., Troussas, C., & Sgouropoulou, C. (2022). Mobile game-based learning as a solution in COVID-19 era: Modeling the pedagogical affordance and student interactions. *Education and information technologies*, 1-13.
- Kwon, K., Ottenbreit-Leftwich, A. T., Sari, A. R., Khlaif, Z., Zhu, M., Nadir, H., & Gok, F. (2019). Teachers' self-efficacy matters: Exploring the integration of mobile computing device in middle schools. *TechTrends*, 63, 682-692. <https://doi.org/10.1007/s11528-019-00402-5>
- Lachner, A., Fabian, A., Franke, U., Preiß, J., Jacob, L., Führer, C., Küchler, U., Paravicini, W., Randler, C., & Thomas, P. (2021). Fostering pre-service teachers' technological pedagogical content knowledge (TPACK): A quasi-experimental field study. *Computers & Education*, 174, 104304.
- Lauermann, F., & ten Hagen, I. (2021). Do teachers' perceived teaching competence and self-efficacy affect students' academic outcomes? A closer look at student-reported classroom processes and outcomes. *Educational psychologist*, 56(4), 265-282.

- Lee, Y., & Lee, J. (2014). Enhancing pre-service teachers' self-efficacy beliefs for technology integration through lesson planning practice. *Computers & Education*, 73, 121-128. <https://doi.org/10.1016/j.compedu.2014.01.001>
- Mishra, P., Koehler, M. J., & Kereluik, K. (2009). Looking back to the future of educational technology. *TechTrends*, 53(5), 49. <https://doi.org/10.1007/s11528-009-0325-3>
- Mouza, C., Karchmer-Klein, R., Nandakumar, R., Ozden, S. Y., & Hu, L. (2014). Investigating the impact of an integrated approach to the development of preservice teachers' technological pedagogical content knowledge (TPACK). *Computers & Education*, 71, 206-221. <https://doi.org/10.1016/j.compedu.2013.09.020>
- Ndlovu, M., Ramdhany, V., Spangenberg, E. D., & Govender, R. (2020). Preservice teachers' beliefs and intentions about integrating mathematics teaching and learning ICTs in their classrooms. *ZDM*, 1-16. <https://doi.org/10.1007/s11858-020-01186-2>
- Ngidi, S., & Ngidi, D. (2019). Determination of factors influencing pre-service teachers' sense of self-efficacy. <https://doi.org/10.24377/sajhe.v49i1.1009>
- Oztemel, E., & Gursev, S. (2020). Literature review of Industry 4.0 and related technologies. *Journal of intelligent manufacturing*, 31, 127-182. <https://doi.org/10.1007/s10845-018-1433-8>
- Putra, Z. H., Hermita, N., Yuliani, S., & Fatmawilda, F. (2022). The effects of gender, study major, and year of study on prospective teachers' mathematical, didactic, and technological knowledge. *Journal of Teaching and Learning in Elementary Education (JTLEE)*, 5(2), 243-253. <https://doi.org/10.3389/fpsyg.2022.7946>
- Rowston, K., Bower, M., & Woodcock, S. (2022). The impact of prior occupations and initial teacher education on post-graduate pre-service teachers' conceptualization and realization of technology integration. *Int J Technol Des Educ*, 32(5), 2631-2669. <https://doi.org/10.1007/s10798-021-09710-5>
- Šabić, J., Baranović, B., & Rogošić, S. (2022). Teachers' self-efficacy for using information and communication technology: The interaction effect of gender and age. *Informatics in education*, 21(2), 353-373. <https://doi.org/10.5772/intechopen.92479>
- Sadaf, A., Newby, T. J., & Ertmer, P. A. (2016). An investigation of the factors that influence preservice teachers' intentions and integration of Web 2.0 tools. *Educational Technology research and development*, 64, 37-64. <https://doi.org/10.1007/s11423-015-9410-9>
- Soboleva, E. V., & Karavaev, N. L. (2020). Characteristics of the Project-Based Teamwork in the Case of Developing a Smart Application in a Digital Educational Environment. *European Journal of Contemporary Education*, 9(2), 417-433. <https://doi.org/10.3390/educsci11020016>
- Teo, T., Unwin, S., Scherer, R., & Gardiner, V. (2021). Initial teacher training for twenty-first century skills in the Fourth Industrial Revolution (IR 4.0): A scoping review. *Computers & Education*, 170, 104223. <https://doi.org/10.1016/j.ced.2021.09.006>
- Tican, C., & Deniz, S. (2019). Pre-service teachers' opinions about the use of 21st century learner and 21st century teacher skills. *European Journal of Educational Research*, 8(1), 181-197. <https://doi.org/10.12973/eu-jer.8.1.181>
- Walker, Z., Kho, H. H., Tan, D., & Lim, N. (2020). Practicum teachers' use of mobile technology as measured by the technology acceptance model. *Asia Pacific Journal of Education*, 40(2), 230-246. <https://doi.org/10.1080/02188791.2019.1671808>
- Wang, Q., & Zhao, G. (2021). ICT self-efficacy mediates most effects of university ICT support on preservice teachers' TPACK: Evidence from three normal universities in China. *British Journal of Educational Technology*, 52(6), 2319-2339. <https://doi.org/10.1111/bjet.13141>

- Wilson, M. L., Ritzhaupt, A. D., & Cheng, L. (2020). The impact of teacher education courses for technology integration on pre-service teacher knowledge: A meta-analysis study. *Computers & Education*, 156, 103941. <https://doi.org/10.1016/j.compedu.2020.104673>
- Yang, D., & Baldwin, S. J. (2020). Using technology to support student learning in an integrated STEM learning environment. *International Journal of Technology in Education and Science*. <https://doi.org/10.1007/s41686-017-0005-1>
- Yildiz Durak, H. (2021). Modeling of relations between K-12 teachers' TPACK levels and their technology integration self-efficacy, technology literacy levels, attitudes toward technology and usage objectives of social networks. *Interactive Learning Environments*, 29(7), 1136-1162. <https://doi.org/10.1080/10494820.2019.1619591>
- Yoon, S. H. (2022). Gender and digital competence: Analysis of pre-service teachers' educational needs and its implications. *International journal of educational research*, 114, 101989. <https://doi.org/10.1080/08830355.2022.2085947>
- Zhang, Z., Maeda, Y., Newby, T., Cheng, Z., & Xu, Q. (2023). The effect of preservice teachers' ICT integration self-efficacy beliefs on their ICT competencies: The mediating role of online self-regulated learning strategies. *Computers & Education*, 193, 104673. <https://doi.org/10.1016/j.compedu.2022.104673>

Copyright: © 2023 (Ibrahim, M & Aydoğmuş, M). This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Authors' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

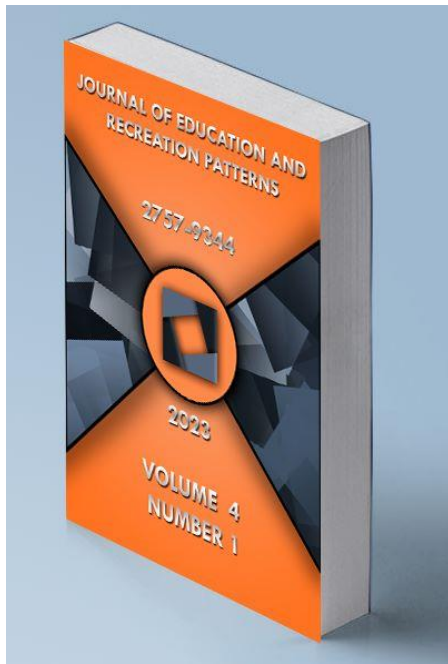
Funding: None

Ethical Considerations: In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. None of the actions stated under the title "Actions Against Scientific Research and Publication Ethics", which is the second part of the directive, were not taken.

Ethical review board name: The Arkansas Tech University Institutional Review Board.

Date of ethics review decision: February 3, 2023.

Ethics assessment document issue number: E-2023-29.



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

“It’s a Complicated Conversation”: Ncaa Division III Athletic Administrators’ Perceptions of Adaptive Sports

Derek WHALEY¹, Kylie DAVIS², Abbey Rose SHAFER³,
Davis KING⁴, Sarah STOKOWSKI⁵, Michael GODFREY⁶

To cite this article:

Whaley, D., Davis, K., Schafer, A. R., King, D., Stokowski, S., & Godfrey, M. (2023). “It’s a Complicated Conversation”: NCAA Division III Athletic Administrators’ Perceptions of Adaptive Sports. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 153-168. DOI: <https://doi.org/10.53016/jerp.v4i1.87>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Derek Whaley, Clemson University, dwwhale@clemson.edu, [ID https://orcid.org/0009-0008-0978-1110](https://orcid.org/0009-0008-0978-1110)

² Kylie Davis, Clemson University, kd2@clemson.edu, [ID https://orcid.org/0009-0007-7004-8674](https://orcid.org/0009-0007-7004-8674)

³ Abbey Rose Schafer, Clemson University, arschaf@clemson.edu, [ID https://orcid.org/0009-0008-8306-980X](https://orcid.org/0009-0008-8306-980X)

⁴ Davis King, Clemson University, daking@clemson.edu, [ID https://orcid.org/0009-0004-8904-6327](https://orcid.org/0009-0004-8904-6327)

⁵ Sarah Stokowski, Clemson University, stoko@clemson.edu, [ID https://orcid.org/0000-0002-7368-7224](https://orcid.org/0000-0002-7368-7224)

⁶ Michael Godfrey, Clemson University, mgodfre@clemson.edu, [ID https://orcid.org/0000-0001-7424-7995](https://orcid.org/0000-0001-7424-7995)

“It’s a Complicated Conversation”: NCAA Division III Athletic Administrator’s Perceptions of Adaptive Sports

Derek WHALEY¹, Kylie DAVIS², Abbey Rose SCHAFER³, Davis KING⁴, Sarah STOKOWSKI⁵, Michael GODFREY⁶

ARTICLE INFORMATION

Original Research Paper

Received 04.01. 2023

Accepted 18.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 153-168

ABSTRACT

In the U.S., adaptive sports have existed for more than 100 years, providing opportunities for individuals with disabilities. Despite the growth of adaptive sports in interscholastic and professional spaces, as well as the NCAA’s commitment to inclusion, there are minimal opportunities for students with disabilities to compete in sports at the collegiate level. Through semi-structured interview method, the purpose of this study was to understand Division III athletic administrators (N= 8) perceptions of adaptive sports. Throughout the data, 4 themes emerged: lack of knowledge, how, impact, and resources. Implications from this study suggest that a strategic plan needs to be developed to improve visibility, awareness, and general knowledge regarding adaptive sports. Additionally, a strategic plan targeting collegiate athletics is necessary to promote conversations around adaptive sports. Sponsoring adaptive sports is in line with the Division III philosophy. Although the participants indicated interest in adopting adaptive sports, barriers (e.g., resources, compliance with federal law) were a deterrent. To this, the NCAA should educate the membership on the benefits of adaptive sports and incentivize institutions to implement adaptive sports programming.

Keywords: Adaptive Sports, Athletic Administration, Division III, Intercollegiate Athletics



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

In the United States (U.S.), 19% of college students reported having a disability (9.3% physical disability); however, less than 0.5% of National Collegiate Athletic Association (NCAA) member institutions offer opportunities to participate in adaptive sports (Siegfried et al., 2021). Siegfried et al. (2021) suggested that the growth of collegiate adaptive sports has increased in recent years due to the development of the American Collegiate Society for Adapted Athletics. Currently, approximately 500,000 NCAA student-athletes represent 1,113 member institutions, competing in 24 men's and women's sports across three divisions (I, II, III; NCAA, n.d.a; Siegfried et al., 2021). According to the Challenged Athletes Foundation (n.d.), as of August 2019, there were only 23 NCAA membership institutions (2.07%) that offered adaptive sports programs.

Student-athletes with disabilities have not always had equal opportunities to participate in the same sports programs as their able-bodied counterparts (e.g., Stokowski, 2013; Stokowski et al., 2017; Stokowski et al., 2020; Stokowski & O'Donnell, 2022). Despite a directive from the U.S. Department of Education's Office of Civil Rights which called for equality in regard to sports participation for individuals with disabilities, such directives do not apply to intercollegiate athletics (Williams, 2013). A study by the United States Government Accountability Office (GAO) in 2010, revealed that students with disabilities did not have equal opportunities to engage in extracurricular athletics (Comerford, 2018). In response, the Office of Civil Rights (2013) published a Dear Colleague Letter outlining policies and practices that must be implemented to promote equal opportunities for sports participation. Since the letter's publication in 2013, interscholastic (high school) athletes with disabilities participation in adaptive sports have steadily increased (Comerford, 2018). With the increase in reported students with disabilities in post-secondary education (De Brey et al., 2021), administrators in higher education must be proactive in their efforts to maintain policy, develop procedures, and offer equitable opportunities for all students (Anderson et al., 2022; Kim et al., 2022; Stokowski & O'Donnell, 2022; Stokowski et al., 2023).

While sport participation rates for athletes with disabilities have increased, there is cause for concern at the collegiate level (McGinniss et al., 2020). As noted by Stokowski and O'Donnell (2022), "as higher education continues to strive to be inclusive and accepting of all identities...it is time for the NCAA to rethink how disability can be included throughout all aspects of collegiate sports" (p. 41). Due to the increase of individuals with disabilities participating in adaptive sports (Comerford, 2018) and the prevalence of students with disabilities in higher education (Siegfried et al., 2021), institutions should consider providing increased opportunities for those with disabilities to participate in NCAA sanctioned sports (Stokowski & O'Donnell, 2022). Therefore, this study aimed to understand Division III athletic administrators' perceptions of collegiate adaptive sports. Specifically, this study strived to answer the following research questions:

RQ1: What are the attitudes of Division III athletic administrators towards providing intercollegiate adaptive sports opportunities?

RQ2: What barriers/facilitators exist in the promotion, development, and growth of adaptive sports among Division III institutions?

LITERATURE REVIEW

Disability

Individuals with disabilities reported a lower quality of life, limited agency, and increased feelings of sadness compared to their able-bodied counterparts (Blinde & Taub, 1999; Zabriskie et al., 2005). To this, individuals with disabilities often do not participate in social activities. Sports participation serves as an effective means to elevate the negative impacts of disability (e.g., Blinde & Taub, 1999; Stokowski et al., 2020; Zabriskie et al., 2005). Sport and recreation activities are a consistent facilitator of an individual's psychological and physical health and provide an ongoing source of personal and social entertainment (e.g., Hutchens et al., 2020; Lower et al., 2013; Proctor et al., 2022). Participation in sports and recreation is particularly valuable for individuals with disabilities in mitigating the negative impacts of disability while facilitating a positive self-image and identity (Lundberg, Bennett, et al., 2011; Mayer et al., 2014; Stokowski et al., 2020). Sports for individuals with disabilities is often unavailable in mainstream sports settings (e.g., Kolotouchkina et al., 2021), further demonstrating the importance of adaptive sports offerings and opportunities.

Adaptive Sports

In the US, adaptive sports, or organized sports for people with disabilities, have existed for over 100 years (Weiler et al., 2022). The first event (Cripples Olympiad), tailored specifically to athletics with physical disabilities, was held in New York in 1911 (Weiler et al., 2022). The Special Olympics organization began in the early 1960s, providing organized and guided training, summer camps, and competitions for individuals with intellectual and cognitive disabilities (Special Olympics, n.d.).

Prior to the introduction of the Special Olympics, the worldwide adaptive sports movement became more prevalent in 1948 due to Dr. Ludwig Guttmann. During this time, Guttmann worked in Germany with patients who had acquired spinal cord injuries during World War II and found sports and recreation to be viable interventions for improving the lives of his patients (Slater & Meade, 2004). Guttmann believed sports provided those with spinal cord injuries a sense of hope and increased feelings of self-worth (Brittain et al., 2013).

Additionally, sports have the power to change society's attitudes toward people with spinal cord injuries. In July of 1948 (parallel to the 1948 Summer Olympics in London), Guttmann held the first wheelchair games at Stoke Mandeville Hospital, just outside London. These games consisted of two teams competing in an archery demonstration and, in 1960, led to the first wheelchair Olympics. In 1976, the wheelchair games would later be known as the Paralympic Games and include individuals with physical, cognitive, and intellectual disabilities (Brittain et al., 2013). Organized and sanctioned by the International Olympic Committee (IOC) and International Paralympic Committee (IPC), the Paralympic Games are held in the summer and winter directly following the Olympic Games in the same host city and provide 28 elite sport competitions (IPC, n.d.).

Adaptive sports serve individuals with varying physical and intellectual disabilities and provide participation opportunities at different levels of competition (i.e., recreational, competitive, elite) all of which have differing intentions, goals, and outcomes. Adaptive sports are commonly practiced throughout various settings: hospitals, local parks, recreation departments, K-12 schools, and universities (Lundberg, Taniguchi, et al., 2011; Mayer et al., 2014). The primary philosophy of adaptive sports is to facilitate independent sport participation by encouraging the participants to modify activities. Such modifications include rule and equipment modifications as well as modifications regarding how the activities are facilitated and instructed (Lundberg, Taniguchi, et al., 2011).

Collegiate Adaptive Sports

Under the direction of the National Wheelchair Basketball Association (NWBA; n.d.), in 1970, the University of Illinois was the first to introduce the first adaptive intercollegiate sport, wheelchair basketball (Siegfried et al., 2021). The NWBA hosted the first national championship in 1977 and continues to host the national collegiate wheelchair basketball tournament. Historically, the NCAA's interest in adaptive sports has been inconsistent. Despite the clear and direct language used in the Rehabilitation Act of 1973 regarding equal opportunities for students with disabilities, institutions continue to receive criticism surrounding athletic opportunities for students with disabilities (McGinniss et al., 2020). In response to those criticisms, in 2015, the Eastern Collegiate Athletics Conference (ECAC) was the first NCAA-sanctioned conference to provide adaptive sports championship opportunities (i.e., swimming, rowing, track and field). Although there was early excitement surrounding the ECAC adaptive sports championships, they did not continue, and there are no definitive indicators of future support from the NCAA (McGinnis et al., 2020).

Recently, the United States Olympic & Paralympic Committee (USOPC) and the NCAA (2023) Office of Inclusion established a relationship in an effort to increase the understanding, connection, and awareness of adaptive sport within the collegiate landscape. This collaboration can potentially have widespread implications for adaptive sports on college campuses across the US. In addition to the USOPC and NCAA Office of Inclusion collaboration, in 2023, the Pac-12 established a policy mandating that the athletic departments at Pac-12 institutions provide athletic department resources (i.e., facilities, services, coaches) to para-athletes enrolled at each Pac-12 institution (Pac-12 Conference, 2023). Such partnerships and initiatives have the potential to increase access to adaptive sports to individuals with disabilities.

Division III

Division III is the NCAA's largest division, with more than 186,415 student-athletes competing in 19 sports at 442 membership institutions (NCAA, 2020). Although Division III makes up 40% of all NCAA student-athletes (Kayda, 2021), intercollegiate sport scholarship has largely ignored the Division III classification (Rubin et al., 2022; Stokowski et al., 2022). Division III has an education-forward approach in which obtaining a degree is of the highest priority (NCAA, 2022). To this, Division III institutions do not provide athletics-related financial aid (NCAA, 2022). Among Division III institutions, on average, a quarter (25%) of the student population participates in intercollegiate sports (NCAA, 2020).

Collegiate Sport Addition Process (CSAP)

The Collegiate Sport Addition Process (CSAP) is a model that considers both an institution's stakeholders and the institution as a whole when contemplating adopting a new sports program (Milstein & Lanzillo, 2019). The CSAP was developed by Milstein and Lanzillo (2019) and focused on gaining perspectives and understanding of NCAA Division I athletic directors regarding their priorities, processes, and factors used when determining the addition of a sports program at their institution. The model provides insight into the decision-making process when considering adopting a new sports program, benefiting institutional leaders and economic stakeholders. Additionally, Melstein and Lanzillo (2019) identified four priority themes (i.e., University Viability, Sport Popularity, Association Membership, Access

and Opportunity) and six phases (i.e., Driving Forces, Justification, Evaluation, Interruptions, Acceptance, Authorization) to the sport adoption decision-making process.

METHOD

Sampling

Given the Division III philosophy and demographic make-up (e.g., largest NCAA classification, student-athletes constitute a significant sub-population of students), this study focused on Division III athletic administrators' perceptions of adaptive sports. Using purposeful sampling, eight Division III athletic administrators participated in this study (see Table 1). All participants identified as White (100%), and the majority were male (n=6). One participant disclosed a disability (hearing loss). The average age of the participants was 37.2 years old, and the participants had been in athletic administration for an average of 23.5 years.

Table 1. Demographic Table (N= 8)

Participants	Age	Race	Sex	Disability Status	Public or Private	Years in Field	State	Role
Roger	58	White	Male	None	Private	38	KS	Director of Athletics
Mason	N/A	White	Male	Hearing loss	Private	45	OH	Associate AD
Macey	35	White	Female	None	Private	13	MD	Director of Athletics
Jason	62	White	Male	None	Private	30	IL	Director of Athletics
Amy	32	White	Female	None	Private	5	WV	Director of Athletic Communication
Gary	40	White	Male	None	Private	18	NY	Director of Athletics
Larry	59	White	Male	None	Private	34	NY	Director of Athletics
Brian	31	White	Male	None	Private	5	OH	Athletics & Admissions Liaison

Data Collection

Due the sampling technique, emails were sent to Division III athletic administrators explaining the purpose of this study and inquiring as to their interest in participating in interviews (via Zoom). Semi-structured interview method was utilized. Dittmore and Stokowski (2019) suggested that eight to 12 participants are desirable when using semi-structured interview method. To this, Eight Division III administrators participated in this study. Each interview began with the researchers introducing themselves and explaining the purpose of the study. The research protocol consisted of demographic questions and nine open-ended questions related to the research questions. Given the semi-structured interview method, the researchers utilized probes (i.e., tell me more) to gain further detail and clarification as needed throughout the interview process (Creswell & Creswell, 2017).

Data Analysis

All interviews were transcribed (via Zoom) and checked for accuracy. To protect the confidentiality of the participants, each was assigned a pseudonym. Coding, categorization, and identification of themes were established through Alhojailan and Ibrahim (2012) three-step coding process. The three steps consisted of data reduction, data display, as well as data drawing and conclusions (Alhojailan & Ibrahim, 2012).

Trustworthiness and validity of the data were determined using triangulation, member checks, and peer debriefing (Creswell & Creswell, 2017). The interview guide was piloted one time and adjusted (i.e., clarity, consistency, understanding) prior to the first interview. Thematic analysis was conducted by two researchers, independent of one another. Upon completion of the thematic analysis, the results were compared and discussed; both researchers interpreted the data similarly.

FINDINGS

The data revealed a multitude of factors that influenced Division III athletic administrators' perceptions of adaptive sports. Four main themes (lack of knowledge, how, impact, resources) and three sub themes within resources (financial, space/facilities, faculty/staff support) emerged from the data.

Lack of Knowledge

The first and most predominant theme across all interviews was the *lack of knowledge* pertaining to the adaptive sports space. Division III administrators verbalized having limited knowledge about the role adaptive sports played at the collegiate level as well as remote familiarity with pre-existing organizations that provided opportunities for adaptive sports. Although most of the participants acknowledged that information regarding adaptive sports was accessible through associations and intramural clubs, such resources failed to result in a tenable or discernable level of awareness that would allow DIII administrators to take calculated steps toward implementing adaptive sports programming. As Roger expressed, "I'll be honest, I don't know as much as I probably should." Similarly, Larry stated, "I'm not as familiar with that, that hasn't really come across my desk or anything."

Only one adaptive sport was mentioned (appeared once) during the interview process, wheelchair basketball. The data suggested that further exploration into the realm of adaptive sports will be necessary to provide administrators with the proper understanding and knowledge to develop adaptive collegiate sports among other NCAA-sanctioned sports.

The research team inquired about the potential of adding adaptive sports programs at Division III institutions, and most participants expressed supportive sentiments toward the idea. However, it should be noted that the participants suggested adding adaptive sports as a club or intramural sport (as opposed to an NCAA-sponsored opportunity). Also, despite their lack of knowledge, the participants displayed a willingness to investigate practical avenues of implementing adaptive sports at their respective institutions. Gary mentioned, "I think there's a lack of understanding. And that is one of the reasons why I engaged with this research project, because it's an area that I don't know a lot about and would like to know more."

How

The second theme that emerged from the data was how. This theme focused on the Division III classification and the implementation of adaptive sports based on the organization's philosophy. Brian stated:

I think, you know, Division III, we exist from an enrollment standpoint. So, if we can help increase enrollment and support enrollment and improve the student experiences in a way, we should consider doing those things. Those are our two main reasons why we exist.

The researchers asked each participant about the Division III philosophy, which states that providing an all-around college experience for all students while they complete their degrees is of the utmost importance (NCAA, 2022). Noted literature on Division III philosophy provides an inclusive framework for administrators to build off independently at their respective institutions, and yet, despite the readily available text on the benefits of this subject, there is no specific mention of including and protecting para-athletics and providing opportunities for individuals with disabilities to participate in sport (Stokowski & O'Donnell, 2022). Due to the lack of recognition, many participants spoke to "sticking with what [they] know" in regard to Division III operational duties.

In addition, there was consistent dialogue about the potential appetite for the physical implementation of adaptive sports programs and the existing facilitators to allow such programs to develop, foster, and grow among Division III institutions. The participants indicated the need for a more robust education regarding the formation of adaptive sports. According to Macey, "I do think there's a need for education and knowledge of what it takes to create an adaptive sports program, what the options are, who are we going to compete against, etc."

Though nonexistent at this time, Amy talked about the inclusion of educational programs not necessarily being an unattainable goal for institutions as consistent continuing education of some kind is most often required by state and federal governments for nearly all educators to remain certified within their field. Researchers and participants noted that with this form of requirement, finding specialists and professionals in this specific field, whether through the Special or Paralympics organizations, willing to provide the NCAA with beneficial assistance is still a possibility. Participants noted that if they were going to begin this process, they wanted to do so properly and with appropriate understanding.

Assistance was a factor mentioned by 50% of participants when discussing the addition of collegiate adaptive sports programs; organizations such as the Special Olympics and Paralympics currently have the notoriety, support, and resources to assist in building competitive programs much like their own and even have some overlap with division three institutions already. Jason Evans stated:

We have a really good relationship with Special Olympians. In fact, if you go to our website, we've got a new facility... that is the home of the Genesis Region Special Olympic training. They can come in there like our general students, and train on their own. We host a lot of their events... I think there's some avenues that'd allow us to be successful in that. If we (as an entire division) chose to go that way.

Another included their university's requirements involving Special Olympics:

I will highlight that the Division III student-athletes, one of their significant community service projects, or core groups, is the Special Olympics, our campus and even on other campuses, we will do adaptive things with Special Olympic students you know, have them experience college life and things, in the hopes that if they're body's able, or if they want to go to college, that they've had a positive experience here.

Although providing opportunities for individuals with all kinds of disabilities is important, some of the participants appeared to lack distinction between the Paralympics and the Special Olympics.

Impact

While many of the administrators indicated that they would be in favor of the NCAA supporting adaptive sports programs, an increase in the presence of students with disabilities at universities is necessary to drive the desire and support for the development of collegiate adaptive sports programs. As stated by Roger:

We are trying to be a place that's very broadly inclusive and aware of where we have succeeded in that and where we have failed in that in recent years and throughout our history. So, I think that there's a piece where, if we could figure out how to do it and find that there were people that were interested and eager to compete in these sports, we should.

Throughout the data, the administrators indicated an inherent need to foster diversity and inclusion while exhibiting an inclination to serve the student-athlete population better. Division III programs are heavily reliant on their institutions' enrollment numbers in order to generate sufficient funding for their programs; the potential implementation of adaptive sports programs hypothetically was brought up by Larry:

But I think if we were to say, look, we have a potential to do adaptive sports and to create something in this field that hasn't existed before. I do think that it would be easier to find money for something like that than to find money for a more traditional sort of collegiate intercollegiate sport.

Multiple participants discussed the potential impact on enrollment that would result from the addition of adaptive sports. An in-depth statement from Gary shed light on the complexities that can appear during the implementation process:

So, I think that whenever we talk about adding sports, it's a complicated conversation because there's so much that goes into that, that goes beyond just, would it be a good opportunity to offer this? Because I think that we're, I don't know, I would say that me personally, I'm always trying to find ways to expand what we are for at this school to the students who are attending the school... I do think that when it comes to offering anything, we're trying to respond to demand for that sport on campus and trying to do it with being able to fund it and sort of support the sport to the degree that the athlete would get the most out of the experience.

Resources

Although the participants supported the implementation of adaptive sports, barriers existed that could potentially detour the addition of adaptive sports programs at these institutions. An overwhelming lack of resources became a prominent theme when categorizing the data. However, not all participating institutions experienced the same limitation(s), thus, generating three subcategories in this area: financial, space and facilities, and faculty and staff support.

Financial Resources

With the understanding that direct resources (e.g., donations, endowments, grants, government assistance) assist in funding Division III institutions, the participants expressed numerous concerns about the viability and financial practicality concerning the addition of adaptive sports programs at this level. Brian stated:

Another thing to just circle back to is that with DIII, I mean, there's no athletic money that is able to be given to students too, right? So that might turn some of these athletes off to that. That said, of course, we can still offer merit money based on academics. And there are several colleges that are willing to offer a lot of merit money for kids to come to their schools.

Jason also noted the monetary requirements may stand in the way of implementing adaptive sports:

You know, it's a consumer market, but that's it. It's the cost. It's money. Yeah, you know, let alone to get qualified coaches to coach whether they're able-bodied or not able-bodied, facilities, transportation.... It doesn't surprise me that there's only one (adaptive program in DIII) so far. I know that it always comes down to money. Yeah, it always comes down to money.

Additionally, administrators identified personnel salaries, program budgets, transportation, equipment, geographical concerns, and COVID-19 as limitations and constraints. Macey elaborated:

Probably resources, salaries, budgets, transportation, facilities. Depending on what kind of a you know, what we need to adapt if it's, you know, like a court for wheelchairs or if it's, whatever that might be. Our facilities are very limited and specifically where we are at foot. We are landlocked and so we are having to go off campus for our varsity teams now. And so where would we have to travel for those students to participate? So really, just resources and money.

Space and Facilities

The second resource subtheme was the lack of (accessible) space. Numerous participants commented on the ages of their institution's buildings and how many structures date back well before the Americans with Disabilities Act (ADA) was enacted. Jason noted:

For example, our facility, we're in a city. We are kind of landlocked. So, I would prefer to have, if I was going to do it right, and treat the student athletes fairly, and again that's a relative word. As equitable as we could possibly do it; we'd need another gymnasium. We'd need another field outside. We'd need some other facilities to actually do this. The other issue with our school is we don't even have all our buildings that are ADA compatible.

ADA requirements and accessibility of facilities, with consideration to infrastructure and design within compliance, was a concurrent topic for many participants who each expressed a valid level of doubt that these requirements could be met in the immediate future. Macey stated:

Our school has several buildings on campus that are not ADA compliant. So how would they get to their dorm rooms? How would they get to the bathroom? How would they get up the steps of some of the buildings? So, with the fact of not being an ADA compliant campus entirely, and also having one person in that building and having to work with all the students on campus would be a challenge where we are.

Faculty and Staff Support

Staffing and hiring practices came into question regarding the resources necessary to successfully implement adaptive sports. The participants expressed that many of their staff members already had various responsibilities. For example, Amy said: “Having the space and the facilities, but also having the staffing, because there is not a whole lot of support staff at the Division III level.”

Travel, transportation, and the detailed aspects of hosting events were complicated components of NCAA-sponsored programs already in existence. To this, the potential addition of adaptive sports brought into question the capability to sustain existing programs along with adaptive sports programs. Amy noted:

So, athletic trainer wise, having multiple athletic trainers and even at our games, managers and SIB level. I know they might not always be stated but having somebody there to work the scores table or work the scoreboard, PA and all that stuff. I think if you were going to put on the proper game to make sure you have all of that put together so it would make them feel like they are playing a collegiate sport.... Being able to spread ourselves out throughout all the collegiate sports, we would just need more support in that aspect.

Additionally, the data displayed a lack of awareness regarding the functional needs of adaptive sports facilities, specifically, the use of shared facilities and the functionality of an adaptive program compared to traditional sports programs. To this, many participants agreed that their lack of knowledge, awareness, and dialogue concerning these existing barriers can be overcome with proper guidance and education.

DISCUSSION

This study strived to understand Division III athletic administrators’ perceptions of adaptive sports and barriers to implementing adapting sports. Four themes emerged Throughout the data (lack of knowledge, how, impact, and resources). The theme of lack of knowledge indicated a need for increased education and visibility of adaptive sports at the college level. Unfortunately, previous studies (El-Shaboury, 2022; Kolotouchkina et al., 2020; Watson, 2020) regarding adaptive sports at various levels (i.e., schools, community, Paralympics) also indicated a widespread lack of awareness of adaptive sports. El-Shaboury (2022) attributed the lack of knowledge surrounding adaptive sports to the failure of programs, practitioners, researchers, and organizations to disseminate information about adaptive sports. Additionally, most literature indicated that adaptive sports are nearly invisible on a large scale or have limited visibility. Adaptive sports media representation is scarce, and the minimal coverage adaptive sports often receive further perpetuates negative stigmas and stereotypes surrounding individuals with disabilities (Kolotouchkina et al., 2021; Watson, 2020).

Although there has been an increase in students with disabilities entering post-secondary education (U.S. Department of Education, 2019), Fines and Block (2020) found that administrators did not see the value in adding adaptive sports, citing the lack of students with disabilities on their campuses. Participants in the present study favor adding adaptive sports programs at Division III institutions. However, the administrators suggested that intramural or club sports would serve as better options for adaptive sports. As sports that are not NCAA sanctioned are not eligible for revenue sharing, athletic administrators should advocate for adaptive sports to be NCAA varsity sports (Siegfried et al., 2021). Given that the participants cited finances as a barrier to adaptive sports implementation, perhaps if adaptive sports were sanctioned by the NCAA, the association could assist in the associated costs (e.g., championships).

Implications

Based on the results of this study, several implications should be considered. First and foremost, there is a need to spread awareness about adaptive sports, the benefits of adaptive sports, and how to implement adaptive sports. According to the NCAA (n.d.b.),

As one of its core values, the NCAA believes in and is committed to an inclusive culture that fosters equitable participation for student-athletes and career opportunities for coaches and administrators from diverse backgrounds. In further recognizing and acting upon this value, the NCAA is increasing efforts to provide opportunities to student-athletes with education-impacting and physical disabilities. (para. 1).

Given the value the NCAA places on promoting sports for individuals with physical disabilities, perhaps the organization should consider financial assistance as well as a “how to” guide for institutions that wish to implement adaptive sports. An impact study should also be conducted to allow institutions to better understand the benefits of adding adaptive sports.

The results of this study also demonstrated the need for ADA compliance. Institutions should strive to ensure all buildings are ADA-compliant. Such efforts are essential for providing equitable experiences for all students and promoting an environment of belonging and inclusion. Institutions should also ensure they are following the directive from the U.S. Department of Education’s Office of Civil Rights to safeguard sports participation opportunities for individuals with disabilities is being offered (Williams, 2013).

Further implications are linked to advocacy, as current adaptive sports practitioners (i.e., allied health professionals, community providers, and the 23 current university programs), large adaptive sports organizations (i.e., Move United, International Paralympic Committee), and those in the mass media have a duty to promote adaptive sports. Such stakeholders must increase visibility, awareness, and general knowledge regarding adaptive sports. Lastly, collegiate athletics must have conversations surrounding adaptive sports to engage athletic administrators. To this, Athletic administrators must be mindful of the CSAP model when considering adding adaptive sports (Melstein & Lanzillo, 2019).

Limitations and Recommendation

Several limitations exist in this study. The sampling technique should be considered a limitation as recruiting athletic administrators to participate in the study proved difficult. Researchers attribute the lack of willingness to participate in the study to the general lack of knowledge of adaptive sports. This study is not generalizable, although the results may be transferrable.

Future research should focus on a larger (and more diverse) sample of Division III institutions. Perhaps studies on adaptive sports should extend to Division I and II institutions and quantitative inquiry should be considered. Future work should examine institutions that

have adaptive sports programs to better understand the process of adding such programs. Adaptive sports student-athletes should be interviewed to better understand the experiences of this particular sub-population of athletes. Lastly, legal and policy scholars should consider examining disability law and accommodations in adaptive intercollegiate sports.

Conclusion

Studies have repeatedly demonstrated that students with disabilities are often denied the opportunity to participate in sports (e.g., Stokowski, 2013; Stokowski et al., 2017; Stokowski et al., 2020; Stokowski & O'Donnell, 2022). However, sports participation has significantly increased the quality of life for individuals with disabilities (e.g., Blinde & Taub, 1999; Stokowski et al., 2020; Zabriskie et al., 2005). Despite legislation (e.g., ADA) that protects individuals with disabilities, directives that strive to promote sports participation for individuals with disabilities are limited to interscholastic, intramural, and club sports (Williams, 2013). The NCAA must honor its mission and implement adaptive sports throughout the membership (Stokowski & O'Donnell, 2022). Given the Division III philosophy (NCAA, n.d.a.) and the benefits of such philosophy (Stokowski et al., 2022), the Division III classification should consider adding adaptive sports.

REFERENCES

- Alhojailan, M. I., & Ibrahim, M. (2012). Thematic analysis: A critical review of its process and evaluation. *West East Journal of Social Sciences*, 1(1), 39-47.
- Anderson, A. R., Stokowski, S., & Turk, M. R. (2022). Sexual minorities in intercollegiate athletics: religion, team culture and acceptance. *Sport in Society*, 25(11), 2303-2322. <https://doi.org/10.1080/17430437.2021.1933452>
- American With Disabilities Act of 1990, 42 U.S.C.§12101 et seq. (1990). <https://www.ada.gov/pubs.adastatute08.htm>
- Blinde, E. M., & Taub, D. E. (1999). Personal empowerment through sport and physical fitness activity: perspectives from male college students with physical and sensory disabilities. *Journal of Sport Behavior*, 22(2), 181–183.
- Brittain, I., Ramshaw, G., & Gammon, S. (2013). The marginalisation of Paralympic heritage. *International Journal of Heritage Studies*, 19(2), 171–185. <https://doi.org/10.1080/13527258.2012.681679>
- Challenged Athletes Foundation. (n.d). *Empowering lives through sport*. Author. <https://www.challengedathletes.org/>
- Comerford, D. M. (2018). A call for NCAA adapted sports championships: Following the Eastern College Athletic Conference's lead to nationalize collegiate athletic opportunities for student-athletes with disabilities. *Marquette Sports Law Review*, 28(2), 525–552.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.
- De Brey, C., Snyder, T. D., Zhang, A., and Dillow, S. A. (2021). *Digest of Education Statistics 2019* (NCES 2021-009). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Dittmore, S. W., & Stokowski, S. (2019). Interviews. In D. P. S. Andrew, P. M. Peterson, & C. D. McEvoy (Eds.), *Research Methods and Design in Sport Management* (2nd ed., pp. 99 - 110). Human Kinetics.
- El-Shaboury, Y. (2022, September 21). *Here's what adaptive athletes think about the future of adaptive sport*. Global Sport Matters. <https://globalsportmatters.com/research/2022/09/21/what-adaptive-athletes-think-future-sports/>

- Fines, A., & Block, M. (2021). Building collegiate adapted sports: goalball case study. *Sport, Education and Society*, 26(3), 326–338. <https://doi.org/10.1080/13573322.2020.1729113>
- Hutchens, S., Stokowski, S., Lasater, K. A., & Dittmore, S. W. (2020). Transformational Leadership in Club Sports. *Kentucky SHAPE Journal*, 58(1), 22-37.
- IPC. (n.d.). *International Paralympic Committee*. Author. <https://www.paralympic.org/>
- Kayda, R. J. (2021). *A predictive correlation study examining attrition among NCAA DIII student-athletes based on roster gender, sport-type, and sport-attrition* [Unpublished doctoral dissertation]. Liberty University.
- Kim, K., Pickett, A. C., Stokowski, S., & Han, J. (2022). Promoting Educational Outcomes Through Openness to Diversity: An Exploration of Sport and Physical Activity. *Journal of Education and Recreation Patterns (JERP)*, 3(2), 60-76. <https://doi.org/10.53016/jerp.v3i2.52>
- Kolotouchkina, O., Llorente-Barroso, C., García-Guardia, M. L., & Pavón, J. (2021). Disability, sport, and television: Media visibility and representation of paralympic games in news programs. *Sustainability (Switzerland)*, 13(1), 1–13. <https://doi.org/10.3390/su13010256>
- Lower, L. M., Turner, B. A., & Petersen, J. C. (2013). A comparative analysis of perceived benefits of participation between recreational sport programs. *Recreational Sports Journal*, 37(1), 66–83. <https://doi.org/10.1123/rsj.37.1.66>
- Lundberg, N., Bennett, J., & Smith, S. (2011). Outcomes of adaptive sports and recreation participation among veterans returning from combat with acquired disability. *Therapeutic Recreation Journal*, 45(2), 105–120.
- Lundberg, N., Taniguchi, S., McCormick, B., & Tibbs, C. (2011). Identity negotiating: Redefining stigmatized identities through adaptive sport and recreation participation among individuals with a disability. *Journal of Leisure Research; Second Quarter*, 43(2), 205-225.
- Madrigal, L., & Robbins, J. E. (2020). Student-athlete stress: An examination in United States Collegiate Athletics. *Journal for the Study of Sports and Athletes in Education*, 14(2), 123–139. <https://doi.org/10.1080/19357397.2020.1774261>
- Mayer, W. E., & Anderson, L. S. (2014). Perceptions of people with disabilities and their families about segregated and inclusive recreation involvement. *Therapeutic Recreation Journal*, 48(2), 150-168.
- McGinniss, K. T., Goutos, D., & Tuakli-Wosornu Y. A. (2020). Diversifying diversity, equity, and inclusion in American college athletics: The case for adaptive (and other non-traditional) sports. *The Sport Journal*. <http://thesportjournal.org/article/diversifying-diversity-equity-and-inclusion-in-american-college-athletics-the-case-for-adaptive-and-other-non-traditional-sports/>
- Milstein, S., & Lanzillo, J. D. (2019). Exploring the process & procedures of adding a sport to NCAA Division I programs. *Chapel Hill, NC: Center for Research in Intercollegiate Athletics*.
- NCAA. (2023, February. 13). *U.S. Olympic & Paralympic Committee and NCAA Office of Inclusion announce first-of-its-kind Paralympic sport advancements across three sports*. Author. <https://www.ncaa.org/news/2023/2/16/media-center-us-olympic-paralympic-committee-and-ncaa-office-of-inclusion-announce-first-of-its-kind-paralympic-sport-advancements-across-three-sports.aspx>
- National Collegiate Athletic Association. (2022). 2022-2023 NCAA Division III Manual. Author.
- National Collegiate Athletic Association. (2020). *NCAA Division III 2020-21 Facts and Figures*.NCAA.org. https://ncaaorg.s3.amazonaws.com/about/d3/D3_FactandFigures.pdf.

- NCAA. (n. d. a.). *Our three divisions*. Author. <https://www.ncaa.org/sports/2016/1/7/about-resources-media-center-ncaa-101-our-three-divisions.aspx>
- NCAA.(n.d.b.). *Student-Athletes with Disabilities*. Author. <https://d67oz7qfnvmpz.cloudfront.net/about/resources/inclusion/student-athletes-disabilities>
- National Wheelchair Basketball Association. (n.d.). *History of wheelchair basketball and NWBA*. Author. <https://www.nwba.org/history>
- Office of Civil Rights (2013, January 25). *Dear Colleague Letter: Students with Disabilities in extracellular activities*. Fact Sheet. <https://www2.ed.gov/about/offices/list/ocr/docs/dcl-factsheet-201301-504.html>
- Pac-12 Conference. (2023, January 24). *Pac-12 introduces Para athletes policy following proposal from Student-Athlete Leadership Team*. Author. <https://pac-12.com/article/2023/01/23/pac-12-introduces-para-athletics-policy-following-proposal-student-athlete>
- Proctor, L. D., Stokowski, S., McArdle, D. H., & Harrison, C. K. (2022). Why kinesiology and ath- letics departments should collaborate to advance health equity. In J. Sanderson & M. Weathers (Eds.), *Health Communication and Sport: Connections, Applications, and Opportunities* (pp. 95-106). Lexington Books.
- Rubin, L. M., Fuller, R. D., & Stokowski, S. (2022). “I might as well get my education”: The experiences of Black male Division III college athletes [Special Issue]. *Journal of Athlete Development and Experience*, 4(1), 17-36. <https://doi.org/10.25035/jade.04.01.03>
- Siegfried, N., Green, E., Swim, N., Montanaro, A., Greenwell, C., & Frederick, E. (2021). An examination of college adaptive sport sponsorship and the role of cause-related marketing. *Journal of Issues in Intercollegiate Athletics*, 14, 483–500.
- Slater, D., & Meade, M. A. (2004). Participation in recreation and sports for persons with spinal cord injury: Review and recommendations. *NeuroRehabilitation*, 19(2), 121–129. <https://doi.org/10.3233/nre-2004-19206>
- Special Olympics*. (n.d.). *About*. Author. <https://www.specialolympics.org/about?locale=en>
- Stokowski, S. E. (2013). *I know I can learn: The experiences of NCAA Division I–FBS student-athletes with learning disabilities and/or ADHD in higher education*. [Doctoral dissertation, University of Tennessee]. ProQuest Dissertations Publishing.
- Stokowski, S., Blunt-Vinti, H., Hardin, R., Goss, B. D., & Turk, M. (2017). I know I can learn: The perceptions of NCAA Division I football college athletes with learning disabilities [Special Issue]. *Journal of Issues in Intercollegiate Athletics*, 95-118.
- Stokowski, S., Fridley, A., Croft, C., Stensland, P., & Arthur-Banning, S. G. (2022). Athlete identity and mental health among NCAA Division III student-athletes [Special Issue]. *Journal of Athlete Development and Experience*, 4(1), 71-82. <https://doi.org/10.25035/jade.04.01.06>
- Stokowski, S., Goldsmith, A., Croft, C., Hutchens, N. S., & Fridley, A. (2020). The impact of football on student-athletes with education-impacting disabilities. *Journal for the Study of Sport and Athletes in Education*, 14(1), 1-18. <https://doi.org/10.1080/19357397.2020.1736488>
- Stokowski, S., & O'Donnell, S. (2022). Rethinking disability inclusion in intercollegiate athletics. *Sports Innovation Journal*, 3(SI), 41–54. <https://doi.org/10.18060/26004>
- Stokowski, S., Rudd, A., Corr, C., Jolly, K., & Fridley, A. (2023). Replicating inclusivity: The relationship between Directors’ Cup rankings and LGBTQIA+ inclusive NCAA athletic departments. *Journal of Education and Recreation Patterns (JERP)*, 4(1), 75-86. <https://doi.org/10.53016/jerp.v4i1.95>

- Watson, J. C. (2020). Uninspired: Framing wheelchair basketball and able-bodied basketball in college news sources. *Communication and Sport*, 8(4–5), 526–544. <https://doi.org/10.1177/2167479519894669>
- Weiler, R., Verhagen, E., Taylor, A., & Ahmed, O. H. (2022). Monitoring the beautiful adapted game: a 3-year prospective surveillance study of injuries in elite English Para football. *Science and Medicine in Football*, 6(4), 415–420. <https://doi.org/10.1080/24733938.2021.1984556>
- Williams, P. (2013, January 25). *U.S. Department of Education Issues 'landmark' directive for disabled student athletes*. The Washington Post. https://www.washingtonpost.com/sports/highschools/us-department-of-education-issues-landmark-directive-for-disabled-student-athletes/2013/01/25/b03f5cae-6737-11e2-9e1b-07db1d2ccd5b_story.html
- Zabriskie, R., Lundberg, N., & Groff, D. (2005). Quality of life and identity: the benefits of a community-based therapeutic recreation and adaptive sports program. *Therapeutic Recreation Journal*, 39(3), 176–191.

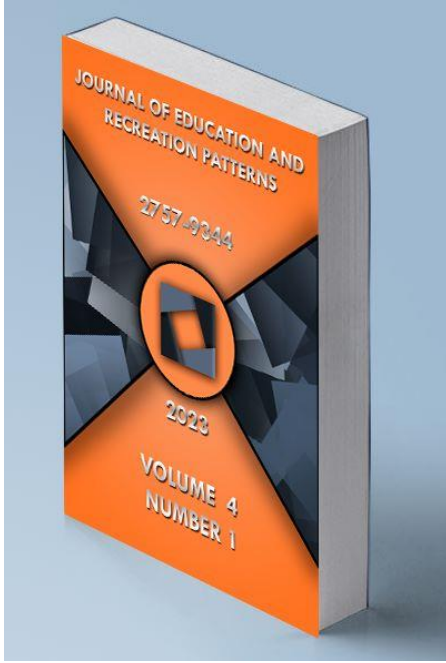
Copyright: © 2023 (Whaley, D., Davis, K., Schafer, A. R., King, D., Stokowski, S., & Godfrey, M.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Authors' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

Digital Literacy, Digital Addiction and Life Satisfaction: Study of Judo Athletes

Arif ÖZSARI¹, Alpaslan GÖRÜCÜ²

To cite this article:

Özsarı, A. & Görücü, A. (2023). Digital Literacy, Digital Addiction and Life Satisfaction: Study of Judo Athletes. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 169-180. DOI: <https://doi.org/10.53016/jerp.v4i1.100>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Arif ÖZSARI, Mersin University, Faculty of Sport Sciences, arifozsari@hotmail.com
<https://orcid.org/0000-0002-4753-8049>

² Alpaslan GÖRÜCÜ, Selcuk University, Faculty of Sport Sciences, alporucu@selcuk.edu.tr
<https://orcid.org/0000-0003-0396-7658>

Digital Literacy, Digital Addiction and Life Satisfaction: Study of Judo AthletesArif ÖZSARI¹, Alpaslan GÖRÜCÜ²**ARTICLE INFORMATION**

Original Research Paper

Received 19.02. 2023

Accepted 20.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1**Pages:** 169-180**ABSTRACT**

This study aimed to investigate the relationship between digital literacy, digital addiction, and life satisfaction among judo athletes. The study group of the research consists of $N=139$ active licensed judo athletes ($N=77$ female, $N=62$ male) who accepted to participate in the research completely voluntarily. In the collection of research data, the digital literacy scale developed by Ng (2012) and translated into Turkish by Hamutoglu et al. (2017), the digital addiction scale (Arslan et al., 2015), and the Satisfaction with Life Scale developed by Diener et al. (1985) and adapted into Turkish by Dağlı and Baysal (2016) and a personal information form were used. The relational model included descriptive statistics as well as correlation and regression analysis. According to the regression analysis results, digital addiction did not have a significant effect on life satisfaction, while digital literacy had a positive and significant ($\beta=0.193$; $p<0.001$) effect on life satisfaction. In conclusion, it was found that digital literacy has a positive effect on life satisfaction and that life satisfaction will increase as the level of digital literacy increases.

Keywords: Digital Addiction, Digital Literacy, Judo Athletes; Life Satisfaction

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

Judo is a defense sport. It may also be characterized as a sport that develops one's character and body (Yuksel, 2019). Towards the end of the nineteenth century, a Japanese educationalist amalgamated different martial arts and established judo not as a sport but as a way of life (Sato, 2013). Judo constantly evolved, and its educational and sportive values were widely recognized in Japan and abroad. Apart from contests and self-defense, modern judo encompasses the research, practicing of katas "patterns", physical training, and spiritual development. Nowadays, the International Judo Federation unites more than 200 national federations and 5 continental unions (Tulendiyava et al., 2021).

The trend of digital addiction has increased significantly over the last two decades (Meng et al., 2022). Digital addiction has previously been shown to be associated with significant impairments of social functions, particularly health, as well as significant problems with personal and social well-being (Peper & Harvey, 2018). Research has shown that there is a significant correlation between digital addiction and other life problems, and despite being aware of the problem, people cannot stop their behavior (Dahl & Bergmark, 2020). On the other hand, the positive effects of sports on human life are obvious. Mentally, physically, and psychologically, sports contribute to the well-being of individuals (Kayhan & Sabah, 2022). According to Liu et al. (2019), smartphone addiction has become a public health problem, and exercise interventions may be effective in treating this condition. Park et al. (2016) reported that sports participation has a significant effect on self-control and internet addiction, and argued the effectiveness and necessity of sports and physical activity in the treatment of internet addiction. Several studies have demonstrated the physical, mental, and cognitive benefits of physical education and sports, as reported by Kuter et al. (2012). According to Chetty et al. (2018), digital literacy also provides individuals with basic skills to make valuable acquisitions in life. As can be seen in the relevant literature, digital addiction leads to various problems. Meanwhile, high levels of digital literacy are thought to have positive effects. In addition to all these, the rehabilitative effect of sports is undeniable. Judo is practiced worldwide as an Olympic sport (Sato, 2013). With this research, it was aimed to investigate the digital addiction and digital literacy levels of judo athletes and the effect of these two variables on life satisfaction. The question of whether digital addiction and literacy levels of individuals who continue to play judo affect their life satisfaction constitutes the starting point of the research. In the following sections of the study, these three concepts are addressed and the research hypotheses are presented.

The ease of access to information as the digital world has settled into the lives of individuals has brought digital literacy to the forefront (Baydar-Arican, 2022). Digital literacy is the ability of individuals to make optimal use of digital devices to access, identify and manage digital resources, create new knowledge and communicate (Martin, 2006). Digital literacy is generally emphasized as the ability to receive and process information and produce new content through information and communication technology (Akman, 2021). Digital literacy has two aspects. The first is to appropriately plan and monitor the effectiveness of the strategies used to search and manage the information available online. The second is the ability to examine and integrate these sources of information appropriately (Greene et al., 2014). The term 'digital literacy' is also used to describe the ability to understand when, where, how much, and how to use digital devices in a conscious and correct manner. According to Eshet (2012), having digital literacy requires more than just the ability to use software or operate a digital device; it includes a wide range of acquisitions such as cognitive, motoric, sociological, and emotional skills that users need to master to use digital environments effectively.

Following the integration of digitalization with communication technologies, daily life continues under the dominance of digital tools. Individuals continue their lives in an intense technology spiral and use these technologies in the work they need to do in their daily routines. From the past to the present, none of the digital tools that have entered our lives with the internet have been so effective and connected in human life and digital tools have become an integral part of individuals' lives. The urge to stay connected and in control of digital technologies has turned into a disadvantage for some individuals, leading to addiction. Nowadays, the close relationship that individuals have with technology has led them to become digital addicts, and they have turned these tools into tools they constantly interact with rather than using them for a specific purpose (Biricik, 2022). The World Health Organization (WHO) defines digital addiction as a mental illness that causes repetitive and persistent attitudes that provide a comprehensive priority over other interests and their impact on life (Jamil et al., 2022). Digital addiction is a condition referring to a control disorder that involves the obsessive use of digital devices, digital technologies, and digital platforms, namely the internet, video games, online platforms, mobile devices, digital tools, and social networking platforms (Singh & Singh, 2019). As a chronic disorder, digital addiction negatively impacts the psychology of the individual (Berthon et al., 2019).

Meanwhile, digital literacy is a process. This process includes cognitive, motor, sociological, and emotional skills that individuals can use in digital media (Eshet, 2004). Digital literacy is the awareness, attitude, and ability of individuals to use digital tools and possibilities appropriately to identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources, create new knowledge, create media expressions, and communicate with others. It is also the ability to reflect on a process for enabling constructive social action in the context of specific life situations (Martin, 2005). Smartphone use has a significant positive influence on digital literacy skills. This suggests that practicing daily tasks will help you develop your digital literacy skills, especially when using technology (Noorrizki et al., 2022).

Given the increasingly prominent role of digital technologies in people's daily lives, it is important to understand their impact on individual life satisfaction (Lissitsa, & Chachashvili-Bolotin, 2016). According to Diener et al (1985), life satisfaction is the satisfaction that an individual perceives from the way of life (Fleming, 2021). Life satisfaction is a broad concept that summarizes one's feelings about life (Stahnke, 2022). In order to define life satisfaction, the concept of satisfaction must first be explained. Satisfaction is the fulfillment of expectations, needs, wishes, and desires. Life satisfaction, meanwhile, is the state or result obtained by comparing one's expectations with what one has. Life satisfaction shows the result of comparing one's expectations with the actual situation. Life satisfaction generally includes one's entire life and various aspects of that life. Life satisfaction does not refer to satisfaction with a specific situation, but to satisfaction in all experiences in general (Ozer & Karabulut, 2003). A further definition of life satisfaction is that it refers to a cognitive/judgmental process by which individuals assess their quality of life according to their own criteria (Hammaji & Ay, 2020). Huebner et al. (2006) suggest that life satisfaction positively contributes to a person's resilience to life's challenges.

The use of digital technologies is constantly increasing and renewed (Baydar-Arıcan, 2022). It is also a fact that digital uses increase life satisfaction (Lissitsa & Chachashvili-Bolotin, 2016). However, due to digital addiction, digital natives spend more time than necessary in virtual environments and are negatively affected both physically and psychologically (Altnok, 2021). Briefly, digital technologies have a say in all aspects of daily life and have a substantial impact on work, education, social relations, and communication styles (Terras & Ramsay, 2016). It can also be stated that concepts such as digital literacy and

digital addiction have emerged as a result of this interaction. Undoubtedly, digitalization is with us in every aspect of life. In today's age of technology, it is considered important to investigate the relationship between digital literacy, digital addiction, and life satisfaction. With this study, it was aimed to investigate the relationship between digital literacy, digital addiction, and life satisfaction in a sample of judo athletes, and to analyze the hypotheses established within the scope of the research model (H1: Digital literacy positively affects life satisfaction. H2: Digital addiction negatively affects life satisfaction).

METHOD

Research Model

Correlational survey models are research models that aim to determine the existence or degree of change between two or more variables (Karasar, 2019). In this study, a correlational survey model was used. The conceptual model of the research (Digital literacy-Digital addiction-Life satisfaction) is presented in Figure 1 below.

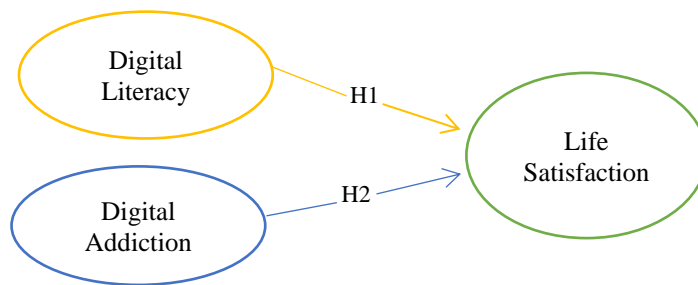


Figure 1. Conceptual model of the research

H₁: Digital literacy positively affects life satisfaction.

H₂: Digital addiction negatively affects life satisfaction.

Research Group

139 judo athletes (Age M=15.92 ± SD= 2.93, N=77 females, N= 62 males) participated in the study.

Data Collection Tools

Digital Literacy Scale: The scale developed by Ng (2012) was translated into Turkish by Hamutoglu et al. (2017). The scale consists of 17 items and 4 sub-dimensions. These dimensions are: "attitude ($\alpha=0.79$)", "technical ($\alpha=0.75$)", "cognitive ($\alpha=0.70$)" and "social ($\alpha=0.74$)". In this study, the overall Cronbach's Alpha value of the scale was found to be $\alpha=0.81$.

Digital Addiction Scale: It was developed by Arslan et al. (2015). The scale consists of three sub-dimensions, namely "digital game addiction ($\alpha=0.83$)", "social media addiction ($\alpha=0.77$)" and "impact on daily life ($\alpha=0.82$)" and 29 items in total. In this study, the overall Cronbach's Alpha value of the scale was found to be $\alpha=0.86$.

The Satisfaction with Life Scale: It was developed by Diener et al (1985). The Turkish adaptation of the scale was conducted by Dağlı and Baysal (2016). The scale consists of 5 items and one dimension. In this study, Cronbach's Alpha value of the scale was found to be ($\alpha=0.71$).

Ethical Considerations

The ethics committee approval of Osmaniye Korkut Ata University, Scientific Research, and Publication Ethics Committee dated 28/12/2022 with the decision number of 2022/10/02 was obtained for the research.

Data Analysis

Descriptive statistics, the Tukey test, and One Way-Anova analyses were used in the study. Within the scope of the correlational model, Pearson correlation and multiple regression analysis were used to test the relationships between the scales.

FINDINGS

In this section, the results of "Correlation and Regression" analyses of the scores of judo athletes' Digital Literacy Scale, Digital Addiction Scale, and Life Satisfaction Scale are given.

Table 1. Descriptive Characteristics of the Athletes Participating in the Research

N:139	M	SD	1	2	3
Digital Literacy	3.35	.573	-		
Digital Addiction	3.08	.590	.237**	-	
Life Satisfaction	3.36	.839	.193*	.043	-

* $p < 0.005$, ** $p < 0.001$

Table 1 presents the findings of the correlation analysis between the general averages of the scales used in the study. It was found that digital literacy and digital addiction ($r=.237$; $p < .001$) were positively and weakly correlated, while digital literacy and life satisfaction ($r=.193$; $p < .005$) were negatively and weakly correlated.

Table 2. Regression Analysis Results

Model	B	Std. Error	Beta (β)	t	p
(Constant)	2.416	.417	-	5.788	.000
1- Digital literacy	.282	.123	.193	2.302	.023*
R=.193 F(1-137)= 5.301	R ² =.037 p=.023*				
(Constant)	3,175	.381	-	8.332	.000
2-Digital addiction	.061	.121	.043	.505	.614
R=.043 F(1-137)= .256	R ² =.002 p=.614				

Dependent variable: Life satisfaction

Table 2 presents the results of the regression test between the overall averages of the Digital Literacy Scale, the Digital Addiction Scale, and the Satisfaction with Life Scale. The multiple regression model shown in the first part of the table is statistically significant ($F(1-137)= 5.301$; $p<0.001$). The R^2 value of the model was found to be 0.037 and the Beta value to be $\beta=.193$. It was found that 3% ($R^2=0.037$) of the variance in the dependent variable (life satisfaction) was explained by the independent variable (digital literacy). Accordingly, the independent variable predicts the dependent variable positively and significantly. In other words, as digital literacy increases, life satisfaction also increases. Thus, hypothesis 1 (H1), which was established within the scope of the research model, was confirmed.

The regression model shown in the second part of the table is statistically insignificant ($F(1-137)= 0.256$; $p>0.005$). Additionally, it can be stated that it is difficult to make a statistical prediction of the independent variable digital addiction based on the dependent variable life satisfaction. Hence, hypothesis 2 (H2), which was established within the scope of the research model, was not confirmed.

DISCUSSION

Individuals who are active licensed athletes in the branch of judo participated in this study, which investigated the relationship between digital literacy, digital addiction, and life satisfaction. The study also presents the effects of digital literacy and digital addiction on life satisfaction in a sample of judo athletes.

According to the correlation analysis findings of the research within the scope of the correlational model, a positive and weak correlation was found between digital literacy and digital addiction, while a positive and weak correlation was found between digital literacy and life satisfaction (Table 1). The results of the regression analysis indicate that the independent variable digital literacy has a significant and positive effect on the dependent variable life satisfaction. The regression analysis conducted to examine the effect of digital addiction on life satisfaction revealed, however, that digital addiction did not have a significant impact on life satisfaction within this sample of participants (Table 2). While the relevant results do not support hypothesis 2 (H2: Digital addiction negatively affects life satisfaction), which was established within the scope of the research model, the results support the hypothesis 1 (H1: Digital literacy affects life satisfaction positively). It has been determined that as digital literacy increases, life satisfaction will also increase.

When the studies in the related literature are reviewed, it is seen that Taskin and Ok (2022) designed a cross-sectional study to analyze data from a nationwide study of digital (smartphone) addiction conducted between 2019 and 2020 by the Ministry of Science and ICT of South Korea and the National Agency for Information Society. As a result of the research conducted with the participation of 41,883 people, they found that there is a positive correlation between digital literacy and life satisfaction. A study conducted by Bae (2022) with the participation of older adults concluded that digital literacy is positively associated with life satisfaction. Sagong and Yoon (2022) reported that smartphone usage levels of the research participants showed significant and positive effects on their life satisfaction. According to Yukay-Yuksel et al (2020), life satisfaction decreased as digital (social media) addiction increased in their research in which young adults were involved. In the study investigating the relationship between smartphone addiction and the life satisfaction of sports sciences faculty students, it was found that as the smartphone addiction levels of individuals decreased, their life satisfaction levels increased (Kula et al., 2020). In another study conducted with the participation of university students, it was found that digital addiction negatively predicted life satisfaction (Atasever et al., 2022). Samaha and Hawi (2016), Fischer-Grote et al. (2021), and

Yakut et al. (2022) found that digital (smartphone) addiction showed a negative correlation with life satisfaction. According to the related findings, life satisfaction decreases as digital addiction increases. Chiu (2014) found that the digital addiction levels of university students in Taiwan can be used to predict their life stress, and as their life stress increases, their digital addiction increases. Based on the results of the related research, in other words, we can conclude that the decrease in students' life satisfaction is linked to the increase in their digital phone addiction. Tas et al (2022) found that an increase in life satisfaction led to a decrease in digital game addiction.

To keep pace with the times, adapt to the development of technological conditions, and maintain awareness, many people today strive to improve their "literacy" levels (Yazıcıoğlu et al, 2020). On the other hand, digital literacy also increases subjective satisfaction in key aspects of life such as interpersonal relationships (Bae, 2022). Yeon and Choi (2019) argued that the increase in digital literacy level has a significant impact on life satisfaction. Digital literacy level positively affects life satisfaction (Choi & Song, 2020). Wang et al. (2022) revealed that digital literacy significantly positively affects the job and life satisfaction of low-income groups in rural areas. Similarly, Shan et al (2022) found that digital literacy has an incentive effect on the accumulation of property income in rural households. Moreover, Yustika and Iswati (2020) found that a high level of digital literacy increases the level of learning and contributes positively to students' academic performance.

Digital devices serve as a vast communication network where individuals can create all kinds of sharing and discussion environments without time and space limitations. The effects of digital uses (smartphones) on individuals can be considered in two dimensions: positive and negative. Positive features of digital uses provide creativity, knowledge sharing, and web-based interactions, access to job opportunities and rich educational content, and enrich individuals' digital media consumerism. However, it leads to problems such as excessive time expenditure, insomnia, cyberbullying, depression, violation of privacy, advertising, and consumer rights (Tukel, 2020). It is thought that digital literacy is important for increasing the positive effects of digitalization and reducing its negative effects. As proven in this study, digital literacy positively affects life satisfaction. Thus, it can be concluded that studies designed to enhance the level of digital literacy of individuals are important.

Conclusion

In conclusion, it is considered that the findings of this study have both theoretical and practical contributions. Firstly, the main theoretical contribution of the research is that digital literacy has a positive impact on life satisfaction in line with the views of the research participants in today's rapidly digitalized world. The practical contribution is that life satisfaction will increase as the level of digital literacy increases. Therefore, it can be suggested that individuals should engage in activities to increase their digital literacy levels in order to achieve sufficient life satisfaction.

Limitations and Recommendations

This study was conducted with the participation of a limited number of judo athletes. Hence, it is thought that further studies with the participation of individuals in different sports branches will enrich the related literature. Therefore, a research study may be conducted with the participation of individuals from a wide variety of sports disciplines who practice individually or as a team.

REFERENCES

- Akman, Y. (2021). Investigation of the relationship between digital literacy, online learning, and academic aspiration. *The Journal of Turkish Educational Sciences*, 19(2), 1012-1036. <https://doi.org/10.37217/tebd.982846>
- Altınok, M. (2021). Investigation of high school students' digital addiction and life satisfaction. *The Journal of Turkish Educational Sciences*, 19(1), 262-291. <https://doi.org/10.37217/tebd.689774>
- Atasever, A., Celik, L., Eroglu, Y. (2022). Mediating effect of digital addiction on the relationship between academic motivation and life satisfaction in university students. *Participatory Educational Research*, 10(1), 17-41. <http://dx.doi.org/10.17275/per.23.2.10.1>
- Bae, S. M. (2022). The mediating effect of digital literacy on the relationship between smartphone use motives and life satisfaction for senior citizens in Korea. *Iranian Journal of Public Health*, 51(2), 336. [https://doi: 10.18502/ijph.v51i2.8686](https://doi:10.18502/ijph.v51i2.8686)
- Baydar-Arican, H.Ö. (2022). The effect of lifelong learning tendency of athlete sedentary students on the level of digital literacy and investigation of some variables. *The Journal of Turkish Sport Sciences*, 5(1), 38-48. <https://doi.org/10.46385/tsbd.1051798>
- Belshaw, D. A. (2012). *What is' digital literacy'? A pragmatic investigation* (Doctoral dissertation, Durham University).
- Berthon, P., Pitt, L., & Campbell, C. (2019). Addictive de-vices: A public policy analysis of sources and solutions to digital addiction. *Journal of Public Policy and Marketing*, 38(4), 451-468. <https://doi.org/10.1177/0743915619859852>
- Biricik, Z. (2022). Digital addictions and digital minimalism as a road to escape from digital addictions. *Turkish Online Journal of Design Art and Communication*, 12(3), 897-912. <https://doi.org/10.7456/11203100/022>
- Chetty, K., Qigui, L., Gcora, N., Josie, J., Wenwei, L., & Fang, C. (2018). Bridging the digital divide: Measuring digital literacy. *Economics*, 12(1),1-20. <https://doi.org/10.5018/economics-ejournal.ja.2018-23>
- Chiu, S.I. (2014). The relationship between life stress and smartphone addiction on Taiwanese university student: A mediation model of learning self-efficacy and social self-efficacy. *Computers in Human Behavior*, 34, 49-57. <https://doi:10.1016/j.chb.2014.01.02>
- Choi, H. I., & Song, I. (2020). The Mediating Effect of Self-efficacy between the Elderly's Digital Information Literacy and Life Satisfaction. *Journal of the Korea Academia-Industrial cooperation Society*, 21(6), 246-255.
- Dagli, A., & Baysal, N. (2016). Adaptation of the satisfaction with life scale into Turkish: the study of validity and reliability. *Electronic Journal of Social Sciences*, 15(59), 1250-1262. <https://doi:10.17755/esosder.75955>
- Dahl, D., & Bergmark, K. H. (2020). *Problematic internet use: A scoping review – longitudinal research on a contemporary social problem, 2006–2017*. *Nordic Studies on Alcohol and Drugs*, 37(6), 497–525. <https://doi:10.1177/1455072520941997>
- Eshet, Y. (2004). Digital literacy: A conceptual framework for survival skills in the digital era. *Journal of Educational Multimedia and Hypermedia*, 13(1), 93-106.
- Eshet, Y. (2012). Thinking in the digital era: A revised model for digital literacy. *Issues In Informing Science and Information Technology*, 9(2), 267-276. [https://doi: 10.28945/1621](https://doi:10.28945/1621)
- Fleming, K. (2021). Examining life satisfaction and self-compassion among students attending a historically black college and university in the U.S. *Journal of Education and Recreation Patterns*, 2(2), 12-20. <https://doi.org/10.53016/jerp.v2i2.14>
- Fischer-Grote, L., Kothgassner, O. D., & Felnhofer, A. (2021). The impact of problematic smartphone use on children's and adolescents' quality of life: A systematic review. *Acta Paediatrica*, 110(5), 1417-1424. <https://doi:10.1111/apa.15714>

- Greene, J.A., Yu, S.B. & Copeland, D.Z. (2014), Measuring critical components of digital literacy and their relationships with learning. *Computers & Education*, 76,55-69. <https://doi: 10.1016/j.compedu.2014.03.008>.
- Hammaji, R.A.M., & Ay, M. (2020). Irak muhasebe çalışanlarının mesleki tükenmişlik, iş doyumunu ve yaşam doyumlarının incelenmesi: Kerkük Örneği. *Selcuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (43), 219-240.
- Huebner, E. S., Suldo, S. M., & Gilman, R. (2006). Life Satisfaction. In G. G. Bear & K. M. Minke (Eds.), *Children's needs III: Development, prevention, and intervention* (pp. 357-368). National Association of School Psychologists.
- Jamil, A. L. N., Anas, N., Aziz, N. H., & Ahmat, A. C. (2022). The concept of digital addiction on muslim community in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 12(4), 933-942. <https://doi: 10.6007/IJARBS/v12-i4/13147>
- Karasar, N. (2019). *Bilimsel araştırma yöntemi*. 34. Baskı. Ankara: Nobel Yay.
- Kayhan, O., & Sabah, S. (2022). Investigation of digital game addiction levels of sedentary and sports students. *Amasya Education Journal*, 11(1),111-120.
- Kula, H., Ayhan, C., Kacay, Z. & Soyer, F., (2020). The relationship between smartphone addiction and life satisfaction: Faculty of sport sciences students. *International Journal of Psychology and Educational Studies*,7(1), 86-95. <https://doi.org/10.17220/ijpes.2020.01.008>
- Kuter, F. Ö., & Kuter, M. (2012). Moral education through physical education and sports. *Journal of Education and Humanities: Theory and Practice*, 3(6), 75-94.
- Lissitsa, S., & Chachashvili-Bolotin, S. (2016). Life satisfaction in the internet age-changes in the past decade. *Computers in Human Behavior*, 54, 197-206. <https://doi.org/10.1016/j.chb.2015.08.001>
- Liu, S., Xiao, T., Yang, L., & Loprinzi, P. D. (2019). Exercise as an alternative approach for treating smartphone addiction: a systematic review and meta-analysis of random controlled trials. *International Journal of Environmental Research and Public Health*, 16(3912),1-16. <https://doi.org/10.3390/ijerph16203912>
- Martin, A. (2005). DigEuLit -A European framework for digital literacy: A progress report. *Journal of e-Literacy*, 2(2), 130-136
- Martin, A. (2006). A European framework for digital literacy. *Nordic Journal of Digital Literacy*, 2(1), 151-161. <https://doi.org/10.18261/ISSN1891-943X-2006-02-06>
- Meng, S. Q., Cheng, J. L., Li, Y.Y., Yang, X.Q., Zheng, J.W., Chang, X.W., Chen,Y., Lu L., Sun,Y., Bao,Y.P., & Shi, J. (2022). Global prevalence of digital addiction in general population: A systematic review and meta-analysis. *Clinical Psychology Review*, 92, 102128. <https://doi.org/10.1016/j.cpr.2022.102128>
- Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, 59(3), 1065-1078. <https://doi.org/10.1016/j.compedu.2012.04.016>
- Noorrizki, R. D., Abadi, D., Siwi, N. S. W., Said, M., Mantara, A. Y., & Ramadhani, F. (2022). Factors affecting digital literacy in young adults. *KnE Social Sciences*, 308-315. <https://doi.org/10.18502/kss.v7i18.12396>
- Ozer, M., & Karabulut, Ö. Ö. (2003). Satisfaction of life in elderly individuals. *Turkish Journal of Geriatrics*, 6(2), 72-74.
- Park, J. A., Park, M. H., Shin, J. H., Li, B., Rolfe, D. T., Yoo, J. Y., & Dittmore, S. W. (2016). Effect of sports participation on internet addiction mediated by self-control: A case of korean adolescents. *Kasetsart Journal of Social Sciences*, 37(3), 164-169. <https://doi.org/10.1016/j.kjss.2016.08.003>
- Peper, E., & Harvey, R. (2018). Digital addiction: Increased loneliness, anxiety, and depression. *NeuroRegulation*, 5(1), 3-3. <https://doi.org/10.15540/nr.5.1.3>

- Samaha, M., & Hawi, N.S. (2016). Relationships among Smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior*, 57, 321-325. <https://doi.org/10.1016/j.chb.2015.12.045>
- Sato, S. (2013). The sportification of judo: Global convergence and evolution. *Journal of global history*, 8(2), 299-317. <https://doi.org/10.1017/S1740022813000235>
- Shan, D., Zhang, Y., & Wang, Y. (2022). Farmers' digital literacy, property income and common prosperity. *Journal of Minzu University of China (Philosophy and Social Sciences edition)*, 49(3), 143-153.
- Stahnke, B. (2022). The meaning of life satisfaction. *International Journal of Applied Positive Psychology*, 6(5), 1-5.
- Sagong, H., & Yoon, J.Y. (2022). The effects of smartphone use on life satisfaction in older adults: The mediating role of depressive symptoms. *CIN: Computers, Informatics, Nursing*, 40(8), 523-530. <https://doi.org/10.1097/CIN.0000000000000867>
- Singh, A. K., & Singh, P. K. (2019). Digital Addiction: A conceptual overview. *Library Philosophy and Practice (e-journal)*, 3538.
- Taskin, B., & Ok, C. (2022). Impact of digital literacy and problematic smartphone use on life satisfaction: Comparing pre-and post-covid-19 pandemic. *European Journal of Investigation in Health, Psychology and Education*, 12(9), 1311-1322. <https://doi.org/10.3390/ejihpe12090091>
- Tas, İ., Karacaoglu, D., Akpınar, İ., & Tas., Y. (2022). Examining the relationship between family life satisfaction and digital game addiction in adolescents. *Online Journal of Technology Addiction and Cyberbullying*, 9(1), 28-42.
- Terras, M. M., & Ramsay, J. (2016). Family digital literacy practices and children's mobile phone use. *Frontiers in psychology*, 7. <https://doi.org/10.3389/fpsyg.2016.01957>
- Tukel, Y. (2020). Investigation of the relationship between smartphone addiction and leisure satisfaction of university students. *International Journal of Technology in Education and Science*, 4(3), 218-226. <https://doi.org/10.46328/ijtes.v4i3.108>
- Tulendiyeva, A., Saliev, T., Andassova, Z., Issabayev, A., & Fakhradiyev, I. (2021). Historical overview of injury prevention in traditional martial arts. *Sport Sciences for Health*, 17(4), 837-848. <https://doi.org/10.1007/s11332-021-00785-0>
- Wang, J., Liu, C., & Cai, Z. (2022). Digital literacy and subjective happiness of low-income groups: Evidence from rural China. *Front Psychology*, 13, 1045187. <https://doi.org/10.3389/fpsyg.2022.1045187>
- Yazıcıoğlu, A., Yaylak, E., & Genc, G. (2020). Digital literacy levels of prospective preschool and primary school teachers. *ODU Journal of Social Sciences Research*, 10(2), 274-286.
- Yeon, E. M., & Choi, H. S. (2019). Relationship between digital informatization capability, digital informatization accessibility and life satisfaction of disabled people: Multigroup analysis of perceived social support network. *Journal of the Korea Academia-Industrial cooperation Society*, 20(12), 636-644.
- Yukay-Yuksel, M., Cini, A., Yasak, B. (2020). Investigation of social media addiction, loneliness and life satisfaction in young adults. *Journal of Atatürk University Kazım Karabekir Education Faculty*, 40, 66-85. <https://doi.org/10.33418/ataunikkefd.676402>
- Yakut, E., Sari, H. & Kuru-Sonmez, Ö.(2022). The role of nomophobia in the relationship of smartphone addiction and life satisfaction: Application of the structural equality model. *Journal of Economics and Administrative Sciences*, 6(1), 79-107. <https://doi.org/10.33399/biibfad.933191>
- Yuksel, E. (2019). *Match-winning analysis of all athletes ranked in the men's category in the judo 2018 youth Turkish championship*. Master's thesis, Marmara University, Turkey.
- Yustika, G. P., & Iswati, S. (2020). Digital literacy in formal online education: A short review. *Dinamika Pendidikan*, 15(1), 66-76. <https://doi.org/10.15294/dp.v15i1.23779>

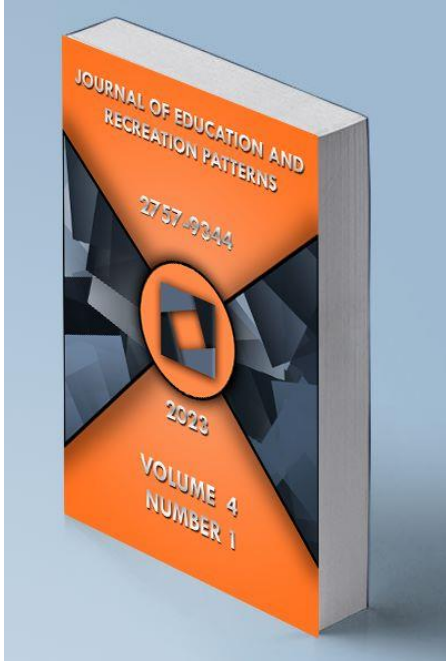
Copyright: © 2023 (Özsarı, A. & Görücü, A.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

Examination of the Stress Factors Experienced by Coaches

Ergün ÇAKIR¹, Mesut GÜLEŞCE², Kemal SARGIN³,
Fatih ERİŞ⁴

To cite this article:

Çakır, E., Güleşce, M., Sargin, K. & Eriş, F. (2023). Examination of the Stress Factors Experienced by Coaches. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 181-191. DOI: <https://doi.org/10.53016/jerp.v4i1.112>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹Ergün Çakır, Assistant Professor, Van Yüzüncü Yıl University, Faculty of Sport Sciences, ecakir@yyu.edu.tr ,
<https://orcid.org/0000-0001-5895-5297>

²Mesut Güleşce, Phd Students. Gazi University, Faculty of Sport Sciences, Sport Management, mesutgulesce@gmail.com <https://orcid.org/0000-0001-6676-6947>

³ Kemal Sargin , Asst.Prof.Dr, Van Yüzüncü Yıl University, Faculty of Sport Sciences, kemalsargin@yyu.edu.tr
<https://orcid.org/0000-0001-5415-9162>

⁴ Fatih Eriş, Asst. Prof. Dr, Van Yüzüncü Yıl University, Faculty of Sport Sciences, fatihervis@yyu.edu.tr,
<https://orcid.org/0000-0002-2301-6801>

Examination of the Stress Factors Experienced by Coaches**Ergün ÇAKIR¹, Mesut GÜLEŞCE², Kemal SARGIN³, Fatih ERİŞ⁴****ARTICLE INFORMATION**

Original Research Paper

Received 20.03. 2023

Accepted 24.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1**Pages:** 181-191**ABSTRACT**

The aim of this study is to determine the factors that increase the dominance of sports coaches on coaches in recent years and show that it is a stressful job. Interview technique was used in the research carried out within the scope of qualitative research. A total of 83 football coaches aged between 32.24 ± 4.14 ($k=4, e=79$) participated voluntarily in the study, in which the criterion sampling method, one of the purposive sampling methods, was used. The data collected with the semi-structured interview form were analyzed using the content analysis method. In line with the opinions of the coaches about the stress situations collected from the research findings, the opinions and suggestions of the coaches about the stress on the concept of performance pressure, interpersonal stress, intra-organizational stress and finally uncertainty are given. As a result, coaches stated that stress is a psychological condition for them, and it is a situation that is likely to be encountered at any time.

Keywords: Sport, Stress, Trainer

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

The concept of stress comes from the Latin "estricia" and although it was used in the meanings of trouble, misfortune, and trouble in the 17th century, it appears as a concept that has undergone a change in meaning in the 18th and 19th centuries for power, pressure, the person, the body organs and the spiritual structure of the person. The first articles on the subject of stress (Selye, 1956) defined it as the body's response to any non-specific demand imposed on the body. Johnstone, 1989: 4 is defined as the effort that an individual spends beyond his physical and psychological limits due to the incompatible conditions in the physical and social environment (Cüceloğlu, 1994). Stress, which is expressed as the disease of modern society, is actually a part of daily life. Most people today have an intense stress load without realizing it. Mental changes in our life, good or bad, are stressful situations. As in any profession, stress can be experienced depending on the natural flow of life. Antrenörlerde oluşan stresin anksiyete, depresyon, yaşam memnuniyeti, depresyon ve yalnızlık gibi deneyimlere sebep olduğu görülebilir (Yalçın, 2022).

Coaching is considered a stressful profession (Gould et al., 2002). The research identified 182 different stressors among elite trainers (Thelwell et al., 2008), one study revealed a wide variety of stressors related to conflict, pressure, isolation, athlete anxieties, competition environment, and competition preparation (Olusoga et al., 2009). Coaching stress can even cause coaches to leave the profession (Frey, 2007). A study revealed that 261 college tennis coaches have moderate to high burnout (Kelley et al., 1999).

The idea that sports coaches are exposed to a wide variety of stressors that can be detrimental to performance and psychological state may warrant further research. This study details the potential antecedents of coaching stress. For example, Thelwell et al, (2008) revealed that coaching stress arises from performance aspects (divided by coaches' own performance and their athletes' performance) and organizational (environmental, leadership, personal, and team) factors. Some studies show that stress can consume the psychological resources of the coaches, limit the ability of the athletes to adapt to their feelings and thoughts, and damage the coach-athlete relationship (Mageau & Vallerand, 2003). Moreover, research shows that coaches who are highly stressed by competition rate themselves as significantly less friendly than their low-stress counterparts (Kellmann & Kallus, 1994). Similarly, coaches who report high levels of stress experience more burnout and need to distance themselves from others (Kelley et al., 1999). A coach in Frey's (2007) research revealed that when he is stressed, his unapproachable demeanor can cause his athletes to avoid him and avoid discussing any topic. Therefore, the stress of the coaches can affect the athletes and cause damage to the satisfaction and performance level of the coaches (Jowett & Cockerill, 2003). Past research has considered it to be a one-way construct in which high stress is harmful and low stress is beneficial. However, stress can be perceived positively and used constructively by coaches. Frey (2007) found that coaches can actually respond positively to stress through improved focus and motivation.

Stress theory recognized the multidimensional nature of stress, considering that stress is transactional and largely dependent on individual perception. Lazarus and Folkman's (1984) psychological stress model proposes that individuals constantly evaluate the events they encounter and that these evaluations include primary and secondary cognitive evaluations. Primary assessments are needed to identify and evaluate the event. Irrational beliefs, especially those that reflect demands (e.g., "I must succeed") are considered an important part of primary assessment (Hyland et al., 2014). Irrational beliefs are rigid, excessive, and irrational beliefs that are thought to be organized like evaluation schemes (DiGiuseppe, 1996) and are associated with greater stress and anxiety (e.g., Turner, 2016). Therefore, irrational beliefs about

performance may disrupt the primary evaluation process (David, 2003; David, Lynn, & Ellis, 2010). Secondary appraisals are seen as appraisals of resources used to deal with the perceived situation. Therefore, if insufficient resources are perceived in a given situation, an maladaptive stress response (threat) will occur. Conversely, if sufficient resources are perceived, an adaptive stress response (challenge) will occur.

In more contemporary challenge and threat theory, the Blascovich and Mendes (2000) biopsychosocial (BPS) model sees challenge as an adaptive approach to a motivated situation (for example, a personally relevant situation such as a competition or interview), whereas threat is a maladaptive one. In challenge and threat theory, the cognitive appraisal process is the central mediator of challenge and threat, and the BPS model distinguishes between both demand and resource appraisals as part of this process. Demand assessments consist of a perception of danger, uncertainty, and required effort. For example, the coaches' team may be losing against a less respected opponent (danger to self-esteem), the coach is unsure how this will affect their job security (uncertainty), and they believe that significant resources will be needed to be successful. Resource assessments are about how an individual copes with demands and include skills, knowledge, and dispositional factors (eg, self-esteem, sense of control, personality traits). For example, if a coach remembers previous games won in a losing situation (skills and experience), is confident in their tactical understanding (knowledge), and often sees stressors as a challenge, they are more likely to face challenges. Challenge and threat theory provides a more accurate way to examine coaching stress and allows for the assessment of stress as a multidimensional rather than a one-sided construct in line with contemporary theory and research (Jones et al., 2009). This study contributes to existing research in several ways. This study explains the relationships between coaching and coaching behavior. The theory argues that threat is related to avoidance goals that keep the individual away from undesirable situations (Blascovich, 2014). One study showed that threat caused more freezing, avoidance stances, and less smiling during a social interaction task (Mendes et al., 2007). Research in sports also shows that challenge is associated with superior performance compared to threat (e.g., Moore et al., 2012; Turner et al., 2012), but no studies have examined a trainer sample. Additionally, while some studies have examined the role of irrational beliefs in cognitive assessment (e.g., David et al., 2002), research has not yet explored the relationships between coaches' irrational beliefs and challenge and threat through sports literature. The literature shows that the behavior of coaches and their relationships with their athletes is a stressful activity that can negatively affect. Although research findings have identified the causal components of coach stress, there is a lack of research examining the multidimensional nature of stress and the idea that stress can be both adaptive and maladaptive (Fletcher & Scott, 2008).

The primary purpose of this study is to examine the recent thoughts and opinions of coaches, especially regarding the stressful event.

METHOD

Research Model

In this study, one of the qualitative research methods, phenomenon, was used. Phenomenology focuses on phenomena that we are aware of but do not have a detailed and deep understanding of. These phenomena, which we encounter in different ways, such as events, experiences, perceptions and or situations, can be encountered in different ways in our daily lives. However, this does not mean that we fully understand these facts. Therefore, phenomenology is used for studies that aim to investigate phenomena that we frequently

encounter on a daily basis, that are not alien to us but whose meaning we cannot fully comprehend, and constitute a suitable research ground (Yıldırım & Şimşek, 2016).

Study Group

The study group of the research was limited to the coaches who lived in the Eastern Anatolia Region, received the Turkish Football Federation Grassroots C Certificate and served as a coach or assistant coach in various teams for at least 5 matches in this field. The research group was determined by the criterion sampling method, which is one of the purposive sampling methods, which allows to study and review all situations that meet some important predetermined criteria (Başaran, 2017), and criteria can be prepared by the researcher or can be prepared in advance. Within the scope of the research, a total of 105 coaching certificate holders were interviewed. The interview forms, which were deemed not to create sufficient content, were excluded from the evaluation, and the interviews with 83 participants, who were thought to have reached the saturation of the data, were evaluated.

Data Collection Tools and Process

In order to obtain the research data, a personal information form and semi-structured questions were prepared for qualitative interview. Demographic questions and semi-structured stress questions were collected on a voluntary basis through individual interviews with the Sony ICD-PX240 4GB Voice Recorder.

Personal Information Form

The personal information form has been prepared by the researcher in order to determine independent variables such as gender, age, education status and city of residence.

Semi-structured interview form

Within the scope of the research, semi-structured interview technique was used, in which the predetermined interview plan was applied exactly to the participant, as well as flexible interviews where new questions could be asked (Karasar, 2015). During the creation of the data collection tools, firstly, draft forms were prepared by scanning the relevant literature depending on the stress they may encounter before the match, during the match and after the match, which is the focus of the research. These forms were arranged and finalized after the opinions of three field experts. The interviews were conducted online. In the interview content, 3 questions were included, apart from demographic questions;

- ✓ What are the things that cause stress before the match?
- ✓ What are the things that cause stress during the match?
- ✓ What are the things that cause stress after the match?

Data Analysis

The data obtained from the answers given by the participants were organized in a logical way according to the explanation, association, pre-conceptualization of the collected data and then the emerging concepts, and the content analysis method was used to determine the themes that explain the data (Yıldırım & Şimşek, 2016). In this study, the codes were reached as a result of the analyzes made, and these codes were grouped under themes after being categorized. However, a table was created by ordering the collected data according to their frequencies.

FINDINGS

The findings of the study were analyzed in two parts. In the first part, the demographic characteristics of the participants are included, while in the second part, the frequency distribution of the themes and sub-themes created by the content analysis technique is included. Table 1 shows the demographic characteristics of the participants. In this study, which aims to determine the stress factors in coaches, four main themes emerged as a result of the interviews with the coaches: "organizational stress", "personal stress", "uncertainty" and "performance stress". The sub-themes within each theme and the codes for these sub-themes are explained below (Table.2).

Table 1. Descriptive Characteristics of Participants

	All participants	Female	Male	Age
	n=83(%100.0)	n=4 (%4.8)	n=79 (%95.2)	n=32,24 ±4,14
Variable and frequency values				
Education level	City			
High School	22	%26,5	Van	8 9,52%
Undergraduate	56	%67,5	Bitlis	6 7,14%
Postgraduate	5	%6,0	Iğdir	5 5,95%
			Muş	5 5,95%
			Hakkari	5 5,95%
			Elazığ	7 8,33%
			Erzincan	6 7,14%
			Tunceli	5 5,95%
			Ardahan	5 5,95%
			Bingöl	6 7,14%
			Ağrı	5 5,95%
			Kars	5 5,95%

Descriptive statistics about the participants are given in Table 1. Accordingly, 95.2% of the study, in which n=83 participants participated, consisted of male participants. While there are 56 individuals with undergraduate education, 26.5% of the high school level shows the education level of the participants. In the living city variable, it is seen that the number of participants is close to each other.

Table 2. Categories and Codes of Stressful Events Experienced by the Coaches Before the Match, During the Match and After the Match

Themes															
Sub-themes and Frequency Values															
Organisational stress(16)	f	Interpersonal stress(31)	f	Uncertainty (22)	f	Organisational stress(16)	f								
Management	(2)	Player selection	(2)	Time pressures	(5)	Player performance	(4)								
Logistics	(3)	Player behaviour/attitude	(13)	Training environment	(9)	Coach Performance	(7)								
Sub-themes	(2)	Parents	(6)	Unforeseen circumstances	(5)	Game strategy	(1)								
								Colleagues incompetence	(1)	Conflict with other coaches	(1)	Officials	(3)	Assessment/observation	(12)
								Administration	(4)	Challenging group	(7)			Results	(5)
								Lack of support	(3)	Player fearing injury	(1)			Level of competition	(3)
								Time pressure	(1)	Player emotions	(1)			Player injury	(1)
						Apprehension Before game	(2)								
						Impact of personal issues	(1)								

In line with the answers given by the participants, the themes and sub-themes were created by scanning the literature. Accordingly, the themes related to the stress experienced by the coaches before, during and after the match consist of organizational stress (n=16), personal stress (n=31), uncertainty (n=22), and performance stress (n=36). Sub-themes related to the themes (see Table.2) are also seen.

DISCUSSION & CONCLUSION

When studies on stress are examined, it is known that different occupational groups are generally exposed to stress (Haberman 2004, Van Dick et al. 1999, Gorter 2005, Guthrie et al. (1999), and coaching is also considered a stressful occupation (Gould et al., 2002) In this study, in which the factors causing stress of the coaches were examined, the sources of stress of the coaches were determined by the opinions of the coaches. As a result of the semi-structured interviews, the stress sources that the coaches experienced were gathered under 4 themes and the sub-themes and frequency values related to the themes were formed. The themes, sub-themes and frequency values created in line with the answers given regarding their opinions will be evaluated and discussed respectively in the light of the literature.

First of all, when the demographic characteristics of the participants are examined, it is seen that a total of 83 participants are distributed as 4 females and 79 males. The mean age of the participants was 32.24 ± 4.14 years. Considering their educational status, undergraduate students are in the majority, followed by high school and graduate graduation. It is seen that the highest density within the scope of the city of residence is Van, Erzurum, Malatya. According to the opinions of the participants, organizational stress is (n=16), personal stress is (n=31), uncertainty is (n=22) and performance stress is (n=36). When the findings related to the sub-theme of the organizational stress theme were examined, it was stated that the most answer was due to the factor "from the manager (n=4)". When we look at the literature, some studies on the stress factor originating from the manager, having to work with insufficiently trained personnel, insufficient wages and financial conditions, working in an unsafe environment, conflict between employees, uncertainties in duties, instability in the task, not having sufficient equipment and workload. (Altuntaş & Seren, 2010).

When the themes were examined, it was seen that the most sub-theme was "Actor Attitude/Behavior (n=13) factor in the personal stress theme created. Attitudes and behaviors in individuals can vary according to the job. Scales and studies on fan attitudes and athletes (Çakır et al., 2023; Sargın and Güleşçe, 2022; İlkım et al., 2023) show what these attitudes stem from and provide answers regarding its sub-dimensions. The stress factor originating from the parent, which is a sub-theme of the personal stress sub-theme, also constitutes the majority of the answers given. Cosh and Tully (2015) stated that elite level athletes have a very important role in the development of their attitudes to cope with stress, support from coaches and parents, in ensuring the successful integration of sports and education, and that they can develop a special coping response to the consequences arising from stress. At the same time, Şimşek et al. (2023), in their study, emphasized that as sports move away from physical activity, stress decreases success and accordingly they exhibit negative behaviors in their normal lives. Holt and Hogg (2002) emphasized that there is a difference in coping with stress between male and female athletes. Goyen and Anshel (1998) emphasized that they use problem-focused coping strategies against attitudes and behaviors that occur in stressful situations. Campen and Roberts (2001); Philippe et al., (2004) reached the finding of Dollen et al., (2015) that the sources of stress between team sports and individual sports coaches also differ on player attitudes and behaviors.

Among the sub-themes constituting the theme of uncertainty stemming from stress, "educational environment" was emphasized the most by the coach. It is seen in studies that the educational environment affects the success, happiness and motivation of students (Özışık, 2019) and takes them away from stress. The quality and appropriate educational environment not only provides psychological and spiritual relief to individuals, but also reveals the value given to the work done. At the same time, while the performance of the coaches in quality and appropriate training environments increases, the negative experiences they experience may reveal stressful situations for the coach and the club.

Finally, when the answers given the most in the sub-theme of the performance stress theme are examined, it is seen that the sub-theme is "evaluation / observation (n=12)." With the introduction of the constructivist approach into our education system, it has become necessary to make various changes in both learning-teaching processes and measurement and evaluation practices, and it is seen that preferring a student-centered learning approach as opposed to passive learning has an effect on the coaches who are in the status of a teacher or trainer. Therefore, incorrect evaluation and observation may cause distress and stress in terms of the decisions made by the coaches. Smoll and Smith (1984) observed the behavior of trainers during training and examined the effects of these behaviors on young athletes. In the findings of the study, it was observed that the responses of the coaches to the attitudes of the athletes had significant effects on the development of the athletes. At the same time, students who participate in university club sports have been shown to develop life-enhancing skills such as coping with stress, maintaining/improving physical fitness, forming friendships and feeling good about oneself(ed. Kanny et al,2022).

As a result, stress, which is the problem of modern times, has become a natural part of our lives as a result of being a modern society and living very fast and active. In the century we live in, no matter what job people do, they lead a large part of their lives by pushing their own abilities and limits. Whether a person earns his living as a member of a public or private sector organization or provides services without being directly dependent on an organization, it is inevitable to meet the concept of stress.

Recommendations

- The productivity of managers can be increased by reducing bureaucratic processes from sources that cause stress.
 - By creating a warm and friendly environment in the workplace, the effects of this source of stress can be reduced. This arrangement will contribute to labor peace.
 - The effects of this stress-causing source can be reduced by reducing the excessive workload to the optimal level. In this way, managers can be helped to increase their success.
 - The performance and efforts of managers can be increased by giving them the opportunity to advance in the profession and to develop themselves.
 - The effects of this source of stress can be reduced to an appropriate level by solving financial problems. Managers who have reduced these problems can stop dealing with other job search and job offers from competitors and focus better on their work.
 - With time management, managers can get rid of time pressure by reducing the stress caused by compelling time constraints related to their work. This may increase the accuracy of their decisions.
 - Managers can minimize the stress caused by trying to complete more than one job at the same time with good planning.
- .When evaluated in terms of recreational sports activities, low-intensity physical activities are recommended in terms of health and it is also known that cognitive and behavioral activities reduce stress (ed. Atılgan, 2020).

REFERENCES

- Akman, Y. (2021). Investigation of the relationship between digital literacy, online learning, and academic aspiration. *The Journal of Turkish Educational Sciences*, 19(2), 1012-1036. <https://doi.org/10.37217/tebd.982846>
- Altuntaş, S., & Seren, S. (2010). Causes of managerial stress of executive nurses. *Anatolian Journal of Nursing and Health Sciences*, 13(3), 36-43.
- Atılğan, D. (2020). Investigation of Happiness Levels of Individuals Actively Exercising for Recreational Purposes During the COVID-19 Outbreak. *Journal of Education and Recreation Patterns (JERP)*, 1(1), 7-16.
- Başaran Y.(2017). Sampling Theory in Social Sciences. *Journal of Academic Social Research*; 5(47):480-495. <https://doi.org/10.16992/ASOS.12368>
- Blascovich, J. (2014). Using physiological indexes in social psychological research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 101-122). New York, NY: Cambridge University Press. <https://doi.org/10.1017/CBO9780511996481.010>
- Blascovich, J., & Mendes, W. B. (2000). Challenge and threat appraisals: The role of affective cues. In J. P. Forgas (Ed.), *Feeling and thinking: The role of affect in social cognition* (pp. 59-82). Paris: Cambridge University Press.
- Campen, C., & Roberts, D. C. (2001). Coping strategies of runners: Perceived effectiveness and match to pre-competitive anxiety. *Journal of Sport Behavior*, 24, 144-161.
- Cosh, Z., & Tully, P. (2015). Stressors, coping, and support mechanisms for student athletes combining elite sport and tertiary education: Implications for practice. *Sport Psychologist*, pp. 1-10. <https://doi.org/10.1123/tsp.2014-0102>.
- Cüceloğlu, Doğan.(1994). *Man and His Behavior. Basic Concepts of Psychology*. Istanbul: Remzi Kitabevi.
- Çakır, E., Sargın, K., Güleşce, M., Öztürkçü, E., & Sonbahar, U. Fan Attitude Scale (TTÖ) .(2023).Validity and Reliability Study. *European Journal of Molecular & Clinical Medicine*, 10(1).
- David, D. (2003). Rational emotive behavior therapy (REBT): The view of a cognitive psychologist. In W. Dryden (Ed.), *Theoretical developments in REBT*. London: Brunner.
- David, D., Lynn, S., & Ellis, A. (2010). *Rational and irrational beliefs. Implications for research, theory, and practice*. New York, NY: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195182231.001.0001>
- David, D., Schnur, J., & Belloiu, A. (2002). Another search for the "hot" cognitions: Appraisal, irrational beliefs, attributions, and their relation to emotion. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 20, 93-131. <https://doi.org/10.1023/A:1019876601693>
- DiGiuseppe, R. (1996). The nature of irrational and rational beliefs: Progress in rational emotive behavior theory. *Journal of Rational-Emotive & CognitiveBehavior Therapy*, 14, 5-28. <https://doi.org/10.1007/BF02238091>
- Dollen, M., Grove, R.J., Pepping, G.J. (2015). A comparison of coping-styles of individual and team athletes of Australia and the Netherlands. *International Sports Studies*, 37(2), 26-48.
- Fletcher, D., & Scott, M. (2010). Psychological stress in sports coaches: A review of concepts, research, and practice. *Journal of Sports Sciences*, 28, 127-137. <https://doi.org/10.1080/02640410903406208>
- Frey, M. (2007). College coaches' experiences with stress—"Problem solvers" have problems, too. *The sport psychologist*, 21(1), 38-57.
- Gorter, R.C. "Work Stress and Burnout among Dental Hygienists", *Int.J. Dent. Hygiene*, 3: ss.88-92, 2005. <https://doi.org/10.1111/j.1601-5037.2005.00130.x>

- Gould, D., Guinan, D., Greenleaf, C., & Chung, Y. (2002). A survey of U.S. Olympic coaches: Variables perceived to have influenced athlete performances and coach effectiveness. *The Sport Psychologist*, 16, 229-250. <https://doi.org/10.1123/tsp.16.3.229>
- Goyen, M. J., & Anshel, M. H. (1998). Sources of acute competitive stress and use of coping strategies as a function of age and gender. *Journal of Applied Developmental Psychology*, 19(3), 469-486. [https://doi.org/10.1016/S0193-3973\(99\)80051-3](https://doi.org/10.1016/S0193-3973(99)80051-3)
- Guthrie, E., Tattan, T., Williams, E., Black, D. ve Bacliocotti, H.(1999). "Comparison of Junior Doctors, Senior Registrars and Consultants", *Psychiatric Bulletin*, 23, ss.207-212. <https://doi.org/10.1192/pb.23.4.207>
- Haberman, M(2004). *Teacher Burnout in Black and White*, The Haberman Educational Foundation.
- Holt, N.L., & Hogg, J.M. (2002). Perceptions of stress and coping during preparations for the 1999 women's soccer world cup finals. *Sport Psychologist*, 16, 251-271. <https://doi.org/10.1123/tsp.16.3.251>
- Hyland, P., Shevlin, M., Adamson, G., & Boduszek, D. (2014). The organization of irrational beliefs in posttraumatic stress symptomology: Testing the predictions of REBT theory using structural equation modelling. *Journal of Clinical Psychology*, 70(1), 48-59. <https://doi.org/10.1002/jclp.22009>
- Ilkım, M., Sargın, K., Güleşce, M., & Sonbahar, U.(2023). Evaluation of the Level of Happiness against Class from Student's Perspective: An Example of Physical Education Lesson. *European Journal of Molecular & Clinical Medicine*, 10(1).
- Johnstone, Margeret. *Stress in Teaching. An Overview of Research*. Midlothian: The Scottish Council for Research in Education. SCRE Publication.
- Jones, M., Meijen, C., McCarthy, P. J., & Sheffield, D. (2009). A theory of challenge and threat states in athletes. *International Review of Sport and Exercise Psychology*, 2, 161-180. <https://doi.org/10.1080/17509840902829331>
- Jowett, S., & Cockerill, I. M. (2003). Olympic medallists' perspective of the athlete-coach relationship. *Psychology of Sport and Exercise*, 4, 313-331. [https://doi.org/10.1016/S1469-0292\(02\)00011-0](https://doi.org/10.1016/S1469-0292(02)00011-0)
- Kanny, S., Hathaway, C., Rudd, A., Stokowski, S., & Godfrey, M. (2022). Concussions in Collegiate Club Sports: Investigating Concussion Education, Knowledge, and Attitudes. *Journal of Education and Recreation Patterns (JERP)*, 3(1), 1–12
- Karasar, N. (2015). *Scientific research method*. Ankara: Nobel Publications
- Kelley, B. C., Eklund, R. C., & Ritter-Taylor, M. (1999). Stress and burnout among collegiate tennis coaches. *Journal of Sport & Exercise Psychology*, 21, 113-120. <https://doi.org/10.1123/jsep.21.2.113>
- Kellmann, M., & Kallus, K. W. (1994). Interrelation between stress and coaches' behavior during rest periods. *Perceptual and Motor Skills*, 79, 207-210. <https://doi.org/10.2466/pms.1994.79.1.207>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York, NY: Springer.
- Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational model. *Journal of Sports Sciences*, 21, 883-904. <https://doi.org/10.1080/0264041031000140374>
- Mendes, W. B., Blascovich, J., Hunter, S. B., Lickel, B., & Jost, J. T. (2007). Threatened by the un-expected: Physiological responses during social interactions with expectancy-violating partners. *Journal of Personality and Social Psychology*, 92, 698-716. <https://doi.org/10.1037/0022-3514.92.4.698>
- Moore, L. J., Vine, S. J., Wilson, M. R., & Freeman, P. (2012). The effects of challenge and threat states on performance: An examination of potential mechanisms. *Psychophysiology*, 49, 1417-1425. <https://doi.org/10.1111/j.1469-8986.2012.01449.x>

- Olusoga, P., Butt, J., Hays, K., & Maynard, I. (2009). Stress in elite sports coaching: Identifying stressors. *Journal of Applied Sport Psychology*, 21, 442-459. <https://doi.org/10.1080/10413200903222921>
- Özişik, L. (2019). Evaluation of the Relationship Between Burnout Syndrome and Learning Approaches, Educational Environment and Academic Achievement in Medical School Senior Students. Hacettepe üniversitesi .Unpublished master's thesis.
- Philippe, R. A., Seiler, R., & Mengisen, W. (2004). Relationships of coping styles with type of sport. *Perceptual and Motor Skills*, 98, 479-486. <https://doi.org/10.2466/pms.98.2.479-486>
- Sargin, K., & Güleşçe, M. (2022). Evaluation of teachers' attitudes towards healthy eating (the case of Van province). *Gaziantep University Journal of Sport Sciences*, 7(1), 1-11. <https://doi.org/10.31680/gaunjss.1000390>
- Smoll, F. L., & Smith, R. E. (1989). Leadership behaviors in sport: a theoretical model and research paradigm 1. *Journal of applied social psychology*, 19(18), 1522-1551.
- Selye, H. (1956). Stress and psychiatry. *American Journal of Psychiatry*, 113(5), 423-427.
- Şimşek, B., Güleşçe, M., Sargin, K., Kartal, A., & Gümüşdağ, H. (2023). A study in the triangle of e-athletes, motivation and physical activity. *Research In Sport Education And Sciences*, 25(1), 7-13.
- Thelwell, R. C., Weston, N. J. V., Greenlees, I. A., & Hutchings, N. (2008). Stressors in elite sport: A coach perspective. *Journal of Sports Sciences*, 26, 905-918. <https://doi.org/10.1080/02640410801885933>
- Turner, M. J., Jones, M. V., Sheffield, D., & Cross, S. L. (2012). Cardiovascular indices of challenge and threat states predict competitive performance. *International Journal of Psychophysiology*, 86, 48-57. <https://doi.org/10.1016/j.ijpsycho.2012.08.004>
- Van Dick, R. Ve ark. "Occupational Stress And Social Support: First Results Of A Study Among Schoolteachers". *Psychologie In Erziehung Und Unterricht*. 1999.
- Yalçın, Y.G. (2022). Unemployment Anxiety and Hopelessness in University Students. *Journal of Education and Recreation Patterns (JERP)*, 3 (2), 130-146. DOI: <https://doi.org/10.53016/jerp.v3i2.67>
- Yıldırım, A. & Şimşek, H. (2016). *Qualitative research methods in social sciences*. Ankara: Seckin Publishing.

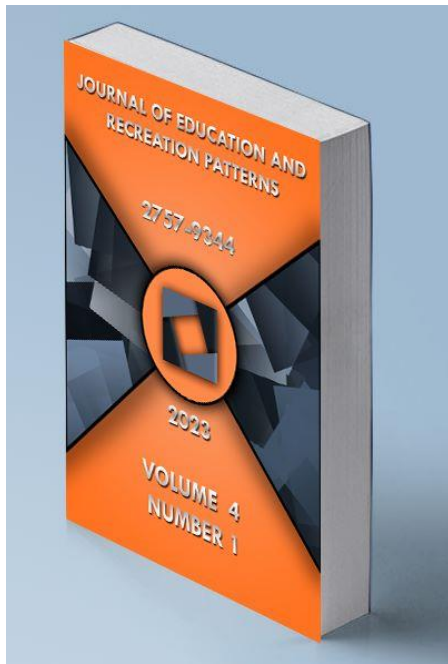
Copyright: © 2023 (Çakır, E., Güleşçe, M., Sargin, K. & Eriş, F.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

Resilience through Recreation: How College Students' Recreational Behavior at a Hispanic-serving Institution in New York City Mediated Negative Emotions after the First Year of the COVID-19 Pandemic

Jacob M. EUBANK¹, Malika M. PEGUES²

To cite this article:

Eubank, J.M. & Pegues, M.M. (2023). Resilience through Recreation: How College Students' Recreational Behavior at a Hispanic-serving Institution in New York City Mediated Negative Emotions after the First Year of the COVID-19 Pandemic. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 192-209. DOI: <https://doi.org/10.53016/jerp.v4i1.103>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹Jacob M. Eubank, Assistant Professor, Lehman College, City University of New York, jacob.eubank@lehman.cuny.edu .  <http://orcid.org/0000-0003-1806-9308>

² Malika M. Pegues, Brooklyn College, City University of New York, Malika.Pegues45@gmail.cuny.edu



Resilience through Recreation: How College Students' Recreational Behavior at a Hispanic-serving Institution in New York City Mediated Negative Emotions after the First Year of the COVID-19 Pandemic

Jacob M. EUBANK¹, Malika M. PEGUES²

ARTICLE INFORMATION

Original Research Paper

Received 14.03. 2023

Accepted 27.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 192-209

ABSTRACT

The well-being needs of college students have increased in recent years and were exacerbated by the COVID-19 pandemic, particularly among students of color living in urban environments such as New York City. This qualitative study explored how COVID-19 influenced recreational behavior of college students at a Hispanic-serving institution in New York City after the first year of the pandemic through the lens of the Social Determinants of Health. Findings indicated that participants experienced increased stress and anxiety due to the pandemic, barriers and influences on their recreational behavior, and how they experienced resilience through their recreational behavior. Higher education administrators could utilize these findings in providing an improved response to acute health crises such as the COVID-19 pandemic through additional support and outreach services to their students.

Keywords: COVID-19, Higher Education, Recreation, Student Affairs, Social Determinants of Health



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

In recent years, the mental health of college students has been of increasing concern (American College Health Association, 2020). Evidence has shown a strong relationship between recreation and resiliency, particularly in unique and stressful experiences (Borrega-Mouquinho et al., 2021; Carriedo et al., 2020; Jaureguizar et al., 2018; Roeh et al., 2020; Soria et al., 2022). Many facilities, services, and programs at higher education institutions exist to address the issue of mental health for college students and these services became even more crucial during the COVID-19 pandemic. Furthermore, health disparities, particularly the mental and physical health, of Black, Indigenous, and other people of color (BIPOC) in urban communities was further exacerbated by the COVID-19 pandemic (van Dorn et al., 2020). Young adults were also specifically identified as being at a higher risk of poor mental health (Stamatis et al., 2021) and BIPOC college students living in urban communities experienced even more inequalities than their White peers (Hoyt et al., 2021).

Recreation

Holba (2014) stated, “recreation is important to human existence because it provides a short diversion and breaks up monotonous moments that fill the day” (p. 183). The COVID-19 pandemic certainly contributed to an increase in monotonous moments through isolation and quarantine, particularly for college students. While recreational opportunities provided by higher education institutions through departments, such as campus recreation, have been shown to alleviate the negative outcomes associated with the stress that college students experience (Eubank & DeVita, 2021), the COVID-19 pandemic caused many higher education institutions to close their campuses and transition their classes and student support services to an online format (Bialek et al., 2020). These sudden closures also impacted the recreational behavior of college students because they no longer had access to the facilities and programs provided by their university. Even worse, the pandemic decreased outdoor recreational behaviors for those who live in an urban setting due to restrictive policies (i.e., social distancing and park closures) (Rice et al., 2020). Students who lived on campus were sent home to live with their parents or guardians, while others chose to live with close friends and relatives. While residing in temporary isolated circumstances, most college-aged individuals experienced a decline in recreation, or they were forced to change their daily routines (Arundell et al., 2022; Rice et al., 2020).

Furthermore, socio-economic status is also a determining factor on whether a student has access to recreational opportunities, meaning that BIPOC college students had less access to recreational facilities and programs during the pandemic (Oncescu & Loewen, 2020). Lack of access to recreation and have been associated with higher stress, anxiety, and depression (Soylu, 2021), resulting in a lack of stress relief (Browning et al., 2021). Symptoms reported included loneliness, decrease in academic performance, substance abuse, sadness, trouble sleeping, and weight-gain as well as lack of motivation and emotional self-regulation due to forced isolation (Browning et al., 2021; Stanton et al., 2020).

Resilience

Resilience has emerged as a protective factor that helps individuals adapt and cope during times of difficulty and uncertainty (Burt & Eubank, 2021; Ebersöhn et al., 2015; Elavsky & McAuley, 2005; Li et al., 2021). During an acute health crisis such as the COVID-19 pandemic, resiliency can contribute to an individual’s ability to combat negative emotions and reduce psychological distress (Bennett & Windle, 2015; Cazan & Tru, 2015; Spies & Seedat, 2014). Overwhelming evidence suggests that recreation, particularly recreation that involves physical exercise, contributes to resilience and individuals who continue recreational activities during times of isolation are highly resilient (Borrega-Mouquinho et al., 2021; Carriedo et al.,

2020; Jaureguizar et al., 2018; Roeh et al., 2020; Soria et al., 2022). Recreation can serve as a mediating factor to anxiety, stress, and depression for college students during the COVID-19 pandemic (Eubank & DeVita, 2021).

Several studies investigated the impact of the COVID-19 pandemic isolation on older adults demonstrating how coping strategies such as recreational participation contributed to resiliency that mediated their stress and isolation (Nurain et al., 2021; Shen et al., 2022; Son et al., 2021), but there is little research exploring the impact of recreation in building resilience to combat anxiety, stress, and isolation in college students attending Hispanic-serving institutions in the United States as a result of the COVID-19 pandemic. Li et al. (2021) investigated resiliency in combating negative emotions during the COVID-19 pandemic, but with college students at a Chinese university, and found that physical exercise reduced those emotions. There is little research exploring the impact of recreation in building resilience to combat anxiety, stress, and isolation in college students in the United States because of the COVID-19 pandemic.

The purpose of this qualitative study was to address this gap in the literature and explore the recreational behaviors of BIPOC college students enrolled at a public four-year, Hispanic-serving institution located in New York City during the COVID-19 pandemic. Therefore, this study sought to answer the following research questions:

1. How did the COVID-19 pandemic impact recreational participation among BIPOC college students attending a Hispanic-serving institution in New York City?
2. How did recreational participation influence the BIPOC college student experience at a Hispanic-serving institution in New York City during the COVID-19 pandemic?

METHOD

Research Site and Participants

This study was conducted at a public four-year, Hispanic-serving institution located in New York City. The site is a commuter school, meaning that there are no dormitories on campus, and students often utilize public transportation to travel to and from campus. However, at the time when the data collection occurred, April 2021, the campus was closed and students were attending courses virtually. It is also important to note that this particular Hispanic-serving institution has a high non-traditional college student population, particularly over the age of 24 years old and older. The institution has an undergraduate population made up of 31% male and 69% female; 55% Hispanic or Latino, 26% Black or African American, 8% White, and 7% Asian (Data USA, 2022).

Upon approval from the institution's institutional review board (IRB), the researchers utilized a convenience sampling method (Hatch, 2022) and sent out a recruitment email to approximately 13,000 undergraduate students through the undergraduate student list serve with information about the study and a link for those interested to participate to provide their email address. Forty participants initially provided their email addresses and were contacted to arrange for a semi-structured interview. Of those 40 participants, 14 agreed to participate. Prior to each semi-structured interview, participants were provided with the informed consent form and asked to complete a survey to provide demographic information such as age, gender, race/ethnicity, student status, and so on. The demographic survey also asked participants to choose a pseudonym to maintain participant confidentiality. The pseudonyms that participants chose for the demographic survey were used throughout the interviews.

Participants were undergraduate college students currently enrolled (i.e., taking courses) and were 18 years of age or older at the time of data collection. The total sample (n=14) included 21.4% Male and 78.6% Female, closely reflecting the ratio of the overall student population at the college. Forty-three percent of the sample identified themselves as African American, 28.5% identified as White, 14% identified as Caribbean Latinx, 7.1% identified as Afro-Caribbean, and 7.1% identified as Indian. Six participants, 43% were within the traditional aged college student category (18-24 years old), the rest were within the non-traditional aged college student category (six were 25-34 years old and two were 35-44 years old). Nine participants, 64.2%, were employed and five, 35.7%, were unemployed. A majority of the participants, eight (57%), reported that they live in the Bronx, which is considered to be the poorest and unhealthiest county in the United States (United States Census Bureau, 2022). Of note, these inequalities were exacerbated by the COVID-19 pandemic with the most deaths than any other borough in New York City (Freytas-Tamura et al., 2020). Six, 43%, of the fourteen participants reported a household income of less than \$40,000 per year. Of note, four out of the six participants that reported a household income of less than \$40,000 per year also reported that they were BIPOC. Table 1.0 includes all demographic information collected from each participant.

Table 1. Participant Demographics (n=14)

Pseudonym	Gender	Race/Ethnicity	Age	Borough	Employment	Household Income
Abby	Female	African American	18-24	Bronx	Unemployed/Looking	\$90,000-\$99,999
Athena	Female	Indian	18-24	Yonkers	Unemployed/Not Looking	\$80,000-\$89,999
Claire	Female	African American	18-24	Bronx	Employed/Wages	\$10,000-\$19,999
Daniel	Male	Afro-Caribbean	25-34	Bronx	Employed/Wages	\$150,000 or more
Glitter	Female	African American	25-34	Bronx	Employed/Wages	\$50,000-\$59,999
James	Male	African American	18-24	Manhattan	Unemployed/Not Looking	\$40,000-\$49,999
Joy	Female	White	25-34	Queens	Unemployed/Looking	\$0-\$10,000
Kay	Female	White	25-34	Manhattan	Employed/Wages	\$50,000-\$59,999
Leah	Female	African American	35-44	Bronx	Unemployed/Looking	\$10,000-\$19,999
Missy	Female	African American	35-44	Brooklyn	Employed/Wages	\$30,000-\$39,999
Nini	Female	Caribbean Latinx	25-34	Bronx	Employed/Wages	\$90,000-\$99,999
Rafy	Male	Caribbean Latinx	18-24	Bronx	Employed/Wages	\$30,000-\$39,999
Sailor	Female	White	25-34	Bronx	Employed/Wages	\$30,000-\$39,999
Silvia	Female	White	18-24	Manhattan	Employed/Wages	Not Reported

Data Collection Tools

Following the tenets of phenomenological qualitative method design semi-structured interviews were conducted using the Zoom virtual meeting software and were recorded for transcription purposes as a way to understand the everyday experiences of the participants during the COVID-19 pandemic (Hatch, 2002). The recorded interviews were transcribed using the transcription feature in Zoom. Examples of the interview questions were “Why do you participate in each activity?” “What motivates you to participate in each activity?” “What role does each activity play in your life?” “How do these activities relate to your friendships, academics, and daily stresses?”

Data Analysis

Upon completing data collection (semi-structured interviews), the researchers analyzed the transcriptions through in vivo coding, independently, after exporting them into the online coding software, Dedoose (Socio Cultural Research & Consultants, LLC., 2016). The researchers analyzed interrater reliability using Cohen’s Kappa and found it to be .61, indicating substantial agreement (McHugh, 2012). Utilizing inductive analysis, the researchers identified frames of analysis and selected frames found throughout multiple interviews, “a

segment of text that is comprehensible by itself and contains one idea, episode, or piece of information” (Hatch, 2002). Codes were then assigned to frames of analysis that were like one another and mapped to components of the World Health Organization’s Social Determinants of Health (SDH) framework (Hatch, 2002; World Health Organization, 2010). The researchers then related the SDH components to the findings in the literature (i.e., recreation as a mediating factor in combating negative emotions by locating data excerpts to support them) (Hatch, 2002).

The SDH Framework “shows how social, economic and political mechanisms give rise to a set of socioeconomic positions, whereby populations are stratified according to income, education, occupation, gender, race/ethnicity and other factors” (Figure 1.) (World Health Organization, 2010). The two aspects of the SDH framework are the structural determinants of health inequities (i.e., socioeconomic context and position) and the intermediary determinants of health (i.e., material circumstances, behaviors and biological factors, and psychosocial factors). The structural determinants of health inequities include structural mechanisms that are “those that generate stratification and social class divisions” such as income, education, occupation, social class, gender, and race/ethnicity and structural determinants that are the result of an individual’s socioeconomic position (i.e. individual factors) (World Health Organization, 2010). The structural determinants also include the overall socioeconomic and political context such as governance, macroeconomic policies, social policies, public policies, and culture and societal values. The socioeconomic and political context (policy factors) and the socioeconomic position (individual factors) within the structural determinants are interrelated, as in they influence each other (World Health Organization, 2010). The intermediary determinants of health include categories that shape an individual’s health outcomes (i.e., material circumstances, behaviors, psychosocial factors). Social cohesion and social capital are shared between the structural determinants and intermediary determinants, and have been determined to be a “key factor in shaping population health” (World Health Organization, 2010). For this study, the communitarian approach was used and is defined as “a psychosocial mechanism” and “the relation between individual health and society” (World Health Organization, 2010). As each semi-structured interview was conducted in this study between the researchers and the individual participant, structural determinants related to socioeconomic position and intermediary determinants related to material circumstances, behaviors, and psychosocial factors were used, along with social capital and social cohesion serving as “cross cutting” determinants (World Health Organization, 2010). See Figure 1. below for further details regarding the Social Determinants of Health Framework.

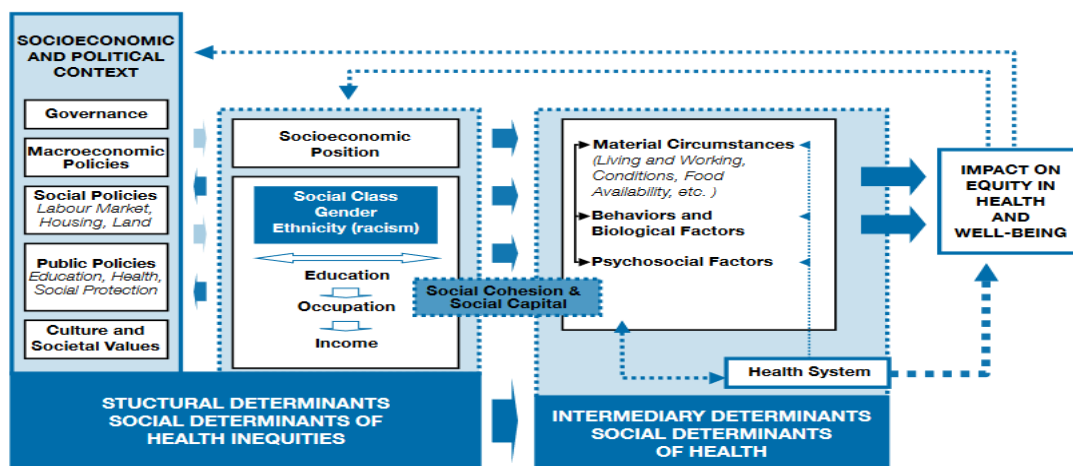


Figure 1. The World Health Organization’s Social Determinants of Health Framework (World Health Organization, 2010).

Positionality and Trustworthiness

One of the researchers currently serves as a faculty member with a focus on college student engagement, particularly in the form of recreation and the other researcher was a student enrolled in a recreation related academic program during the time the study was conducted. Therefore, one author (Eubank) worked at the institution during data collection and the other author (Pegues) was enrolled as a student. Eubank identifies as a cisgender, white male and Pegues identifies as a cisgender BIPOC female who both regularly participated in recreational activities as a way to reduce the psychological effects of the COVID-19 pandemic. While the researchers recognized their innate biases and attempted to avoid leading participants during the semi-structured interviews, we also see that our knowledge of the research topic assisted us as an interpretive lens (Denzin, 2017). Therefore, once analysis was complete, member-checking was conducted to ensure that the researchers interpreted what the participant communicated correctly (Shenton, 2004). All fourteen participants in the sample verified “that their words match what they actually intended” (Shenton, 2004).

RESULTS

Participants in this study reported that their recreational behaviors were impacted by the COVID-19 pandemic (i.e., socioeconomic and political context in the SDH). Social (labor market and land) and public policies (education and health) included the closure of many higher education institutions and city parks (i.e., open green spaces) limiting access to recreational opportunities for the participants. Their socioeconomic position (i.e., education, occupation, and income) created additional inequities where they were left on their own to find recreational opportunities in their material circumstances to mediate the negative emotions they experienced (World Health Organization, 2010). Many discussed their daily stresses, barriers to recreation, and the types of activities they enjoyed.

Structural Determinants of Health Inequities

Socioeconomic and Political Context (COVID-19)

The pandemic caused governing officials to act hastily in their response by implementing social and public policies that impacted the lives of those individuals living in New York City. Many found themselves being sent home from their employment indefinitely, some being able to continue to work from home and some losing their jobs (van Dorn et al., 2020). Businesses and other organizations that employees relied on for income closed. Schools, both K-12 and higher education, converted to online learning platforms (Maloney & Kim, 2020). The sudden closure of businesses and educational institutions left many who may have lost their jobs (i.e., occupation and income) and may have been attending college (i.e., education) experienced a great deal of stress and anxiety during unprecedented times (Airhihenbuwa et al., 2020). Those who were low-income BIPOC college students were impacted the most by these social and public policies.

Socioeconomic Position

The pandemic exacerbated existing daily stresses and barriers to recreational opportunities existed for many participants. Quarantine, school closures, and recreational facility closures were barriers seldom experienced before the pandemic. Time management and other responsibilities such as school and work were also reported and seemed to be more difficult to navigate.

The participants still experienced stress and anxiety due to school, work, and for some, increased family responsibilities. Work and school seemed to be the main source of daily stress

for my of the participants. For Silvia, although all her classes moved to the online format, she was still worried about her academics and the future. She said, “thinking about that I know it’s going to be a lot of commitments and, you know, finishing up my degree at [institution]...moving to a new thing, so I say a lot of that would be probably the major stress.” Leah had the same sentiment and stated, “academic pressures, you know, it has been a quite a semester. Assignment, one behind the other so that that kind of stress.” For those that were still able to maintain employment, balancing that and school was also very difficult, especially for James. He explained:

I work for one of the big four accounting firms and I would do that full time. And I would also go to school full time. Stressful, stressful situation. I’m not sure if you’ve ever heard of the busy season. Being a part of the Big Four you’re usually working six, seven days a week, 14-hour days during that time period of January to March. So yeah, so I was my first time experiencing busy season. Last year, I was working for a nonprofit and the CFO left. And I was the only person there running six nonprofits, the entire finance department on my own. That was my first time ever having to deal with anything of that sort. So that kind of that was a bit stressful. I’m also studying for the CPA. That I would say that’s stressful and I have four college exams too.

Diana expressed the same source of stress as James trying to balance between work and school. She said, “I work only 24 hours a week at my job, and all the other time I have left is for being in school. So, it’s the only stress I say I would have is school and work.”

Some additional sources of stress that participants identified were family obligations coupled with balancing between work and school. Nini said:

A great example I can give is during the pandemic was my first semester back to school in years. It was also my first semester with an infant and my husband works for sanitation, so he works during the snow season overnight so trying to navigate the beginning of the semester, an infant by myself added a lot of stress. I did not know how I was going to balance or manage everything between a full-time job, school, and taking care of the baby.

Claire also experienced stress from family dynamics and responsibilities. She indicated, “Touchy relationship with my family, like we’re kind of like on good terms now but I don’t know how long it’s going to last.” Claire also reflected on another source of stress, time management. She stated, “Since we’re all working remotely, I feel like sometimes I’m always on calls, not really have a work-life balance. I’m waking up late, going to sleep late, that probably contributes to a bad day.

For many participants, the COVID-19 pandemic presented several barriers to their normal recreational routine such as facility closures, family obligations, school and/or work, time management, injuries, and weather. Missy enjoyed dancing at a studio before the pandemic, but the pandemic caused her studio to close. She asserted, “COVID restricted my dancing. The studio has been closed since the beginning of the pandemic and I don’t know when it is re-opening, so I haven’t danced since then.” Like Missy, Leah participated in Shape Up NYC, which was a program that encouraged exercise through kickboxing, but was closed at the start of the pandemic. She acknowledged:

Last year there was a Shape Up NYC event that happened at a state park and I was participating in it on Saturdays. I was getting to know people, we were having fun in

the kickboxing class, but I was only there for about five sessions and then the next thing I know the teacher got sick and it shut down abruptly. Ever since then, they haven't had anything else so it's been rough.

Joy's barriers to her daily walks included her family obligations. She indicated, "My mom lost her job because of the pandemic and now it's been a year. I'm also worried about her because she's going through depression, so that keeps me from my regular activities, like walking." Other health barriers existed for Rafy, Kay, and Missy who were all dealing with an injury of some kind. For example, Missy said, "Recently I had shoulder surgery at the beginning of the Spring semester, literally a week after the start of the pandemic, so that restricted me from much of my activities."

Participants who enjoyed less active recreational activities such as reading, writing, drawing, arts and crafts, playing video games, and/or watching television also experienced barriers to them. For Sylvia, one of the biggest barriers to watching some of her favorite television shows and reading was prioritizing other commitments. She stated:

If you have a lot of other commitments, which isn't necessarily a bad thing, it just happens. I would have to cut down on some of them and prioritize, so I would cut down on watching shows...maybe the amount of time that I'd be reading would be shortened.

Daniel was also forced to prioritize his activities due to his schoolwork. He declared, "The free time is going to be a little limited for reading because I know I'm going to have a bunch of other stuff to read for school." Like Daniel, Nini reflected on her schoolwork as a primary barrier to her recreational behavior. She asserted, "When I have school at a time when I normally dedicate to [recreation], it has to then go to my studies."

Intermediary Determinants of Health

Material Circumstances, Behaviors, and Psychosocial Factors

Participants were still dealing with a lot of stress during the COVID-19 pandemic. They identified many sources of stress, but also participated in their recreational activities to cope with their stress.

Participants credited their recreational activities for relieving much of the stress they were dealing with during the pandemic. Kay indicated, "I think that they [activity] helped me because it's a way to relieve stress and helps me keep my mind focused. If I did not have a way to relieve stress, I would be burnt out." Glitter also participates in her recreational activities to cope with all of her responsibilities. She asserted, "Kickboxing is a good stress reliever. It's something to break the cycle of just being home all the time, constantly with two jobs, and I'm a full-time student." Athena also relieved stress through her recreational activities. She stated, "I feel like for running, it helps me clear my mind." She went on to reflect on how running helps her academically acknowledging, "It makes me more alert so if I do it in the morning and I have classes, I feel like I'm better prepared." Abby credited taking daily trips to the park near her house for many things such as stress relief and meeting other people:

The park that I mentioned, it's not far from me but it's a getaway from this house I'm in. It gets me going and is a good stress reliever. I also get fit, I get to meet other people at the park.

More passive activities also played a role in relieving much of the stress that participants were facing during the COVID-19 pandemic. For Abby, reading was a way to escape with her imagination. She said, "You and I, we read the same book, we're going to have different imagery in our heads. There's no way we can have the same picture of what the story is

describing...which is why I like reading.” Daniel, who feels that school is his only source of stress in his life, enjoys listening to music, writing poetry, watching television, and smoking marijuana to cope with that stress. He indicated:

Poetry makes me think about the stresses and what’s going on in my head when I write, so it’s more of a venting or a coping mechanism. Same thing with television, its escapism, your entering another world. And weed, it’s a little bit of both because you analyze where you are right now, what’s going on, but at the same time you could also just forget...just be in the present.

Diana found that watching television also provided an escape from her daily life during the pandemic. She indicated, “Definitely escapism. Just like, let me pop into this world. I think about the stresses and what’s going through my head, so it’s more of a venting or coping mechanism.”

Social Cohesion and Social Capital

Participants reported many differences regarding the recreational activities that they enjoyed, many of which required them to adjust their routines or adopt new ones during the pandemic. Some activities that participants reflected upon were activities that they participated in alone, sometimes with no choice due to quarantine from the pandemic. Participants also found activities that they liked to engage in with others. Of note, participants found enjoyment, improved their social capital, and created a sense of social cohesion through engaging in both individual and group activities.

Individual Activities: Participants identified several individual recreational activities they enjoyed taking part in by themselves such as going on walks or runs in their neighborhoods, yoga, cleaning or housework, cycling, working out, and hiking. When asked what activities she enjoys participating alone, Claire stated that, “I take walks, I do yoga by myself. I also like cleaning; I clean by myself too...there are lots of things I do by myself.” Ruffy and his family also participate in individual recreational activities. During the pandemic, they bought a stationary bike to help get their mother to start exercising. He stated:

The bike is a recent purchase. It was during the quarantine because beforehand, I would message my friends or they would message me and we’d go play American football or something in the park nearby...but now that we’re inside, not going out as often, even though things are a little better than they were before...so we got the bike.

Joy also found that going outside to walk was one of the more convenient recreational activities to do by herself during the pandemic. She said, “When I go on walks, I mostly like to be present and just enjoy the day.”

Participants also enjoyed many individual activities, which were more passive, such as reading, listening to music, drawing, writing poetry, cooking, and watching television. Abby enjoyed listening to music and drawing by herself and asserted, “I put my headphones in, and I just start drawing. On my way to work I put my headphones in, or if the internet is not working, I start reading or I do both at the same time.” James is an avid sports fan, he indicated, “So it’s playoffs now and I’ve pretty much caught every game for the last three weeks or so.” Diana found that she liked to write poetry by herself but looked forward to sharing her writings with others upon returning to face-to-face interactions. She stated, “With poetry, I really think I’d rather write it on my own because it’s coming from me...but maybe there’ll be a club that we can share our readings once campus opens up again.”

Despite the many reported barriers (e.g., bad weather, facility closures, time, other priorities), participants still found ways to enjoy their own recreational behaviors, and many liked to do them alone.

Group Activities: Participants identified more active, group recreational activities they enjoyed doing with others or in the presence of others such as walking or running in their neighborhoods, playing sports, virtual fitness classes, and lifting weights. Leah enjoyed participating in many activities with her friends and family. She said:

With family and friends, that's what I would like to do. I'm trying to see about getting back to making plans with friends. I have friends who would like to make plans to get together again to socialize, and these things I would like to do with my friends either working out or taking a stroll in the parking.

Daniel also enjoyed playing sports with his friends outside during the pandemic and while indoor facilities were closed. He indicated, "Oh yeah, of course, basketball with friends is great to do outside right now." Abby, who enjoyed running in groups, asserted, "I would say running because I made a few friends at the park, so we run together now...I also play soccer with my brother in the backyard." Joy thought it was a good idea to walk with her mom to keep her moving as well. She declared, "I haven't been eating healthy, so I put walking on my daily activities and I'm also trying to get my mom out walking. It's much better if she has someone to push her."

Many participants also engaged in more passive, group activities, which they enjoyed with their friends, families, or in the presence of others such as playing video games (either with others in the same room or virtually), smoking marijuana or drinking socially, and sewing or knitting. When asked what activities he enjoyed participating in, Rafy asserted, "I like playing video games, I play a lot of Destiny too...I'm often time playing it with my friends trying to get these higher-level activities done." Like Rafy, Daniel enjoyed playing chess with others. He said, "Whoever wants to play chess. It's hard because I used to go to tournaments and recently joined a club." Claire shared that she is "a social drinker that does not drink alone, but only drinks when there are people around." Missy started to crochet with her sister and niece during the pandemic. She stated, "My sister is over at my house a lot now. I taught her how to crochet and knit, so we do that together."

DISCUSSION

Policies that involved the sudden closures of their college campus and other recreational facilities due to COVID-19 (socioeconomic and political context) certainly impacted undergraduate BIPOC students who mostly had a household income of \$40,000 or less. Living in one of the unhealthiest counties in the United States (socioeconomic position) created additional barriers to recreation (intermediary determinants of health) that impacted their health and well-being (Rice et al., 2020; World Health Organization, 2010). Fang et al. (2021) and Rice et al. (2020) found that the strict policies that included facility closures put an unwarranted burden on participants living in an urban environment such as New York City and negatively impacted their recreational behaviors. However, participants in this study were able to find various recreational opportunities on their own that served as intermediary determinants (i.e., material circumstances and psychological factors) that positively impacted their health and well-being (i.e., contributing to their resilience). Similarly, Çakir (2023) found that engagement in sports and physical activity improved quality of life in sports and physical activity participants from a sample of undergraduate students in Turkey.

The findings indicate that although these policies were detrimental to their health and well-being, participants found alternatives to existing recreational behaviors or found new ones. Their recreational activities contributed to a reduction in stress and anxiety and

maintaining healthy relationships (social cohesion and social capital) (World Health Organization, 2010), similar to other studies focused on the positive outcomes associated with participation at recreation-based services provided by many higher education institutions (Eubank & DeVita, 2015, 2021, 2023; Soria et al., 2022). Considering the Hispanic-serving institution that they attended does not have a Department of Campus Recreation, as other colleges do, this institution did still have facilities such as a free weight room, basketball courts, a swimming pool, and racquetball courts. However, very little programming occurs, and participation is done informally with limited supervision. Many college students depend on the resources provided by their higher education institution (i.e. recreational opportunities) (Forrester et al., 2018). Unfortunately, due to policies surrounding COVID-19, once the campus and recreational facilities were closed, there was no outreach resources provided to students like at other colleges and universities with a campus recreation department. Consequently, participants were left on their own regarding recreational behavior, a majority of whom lived in the urban environment of New York City. Figure 2. below provides further illustration how the findings in this study were applied to the World Health Organization’s Social Determinants of Health Framework (World Health Organization, 2010).

Findings Applied to the SDH Framework

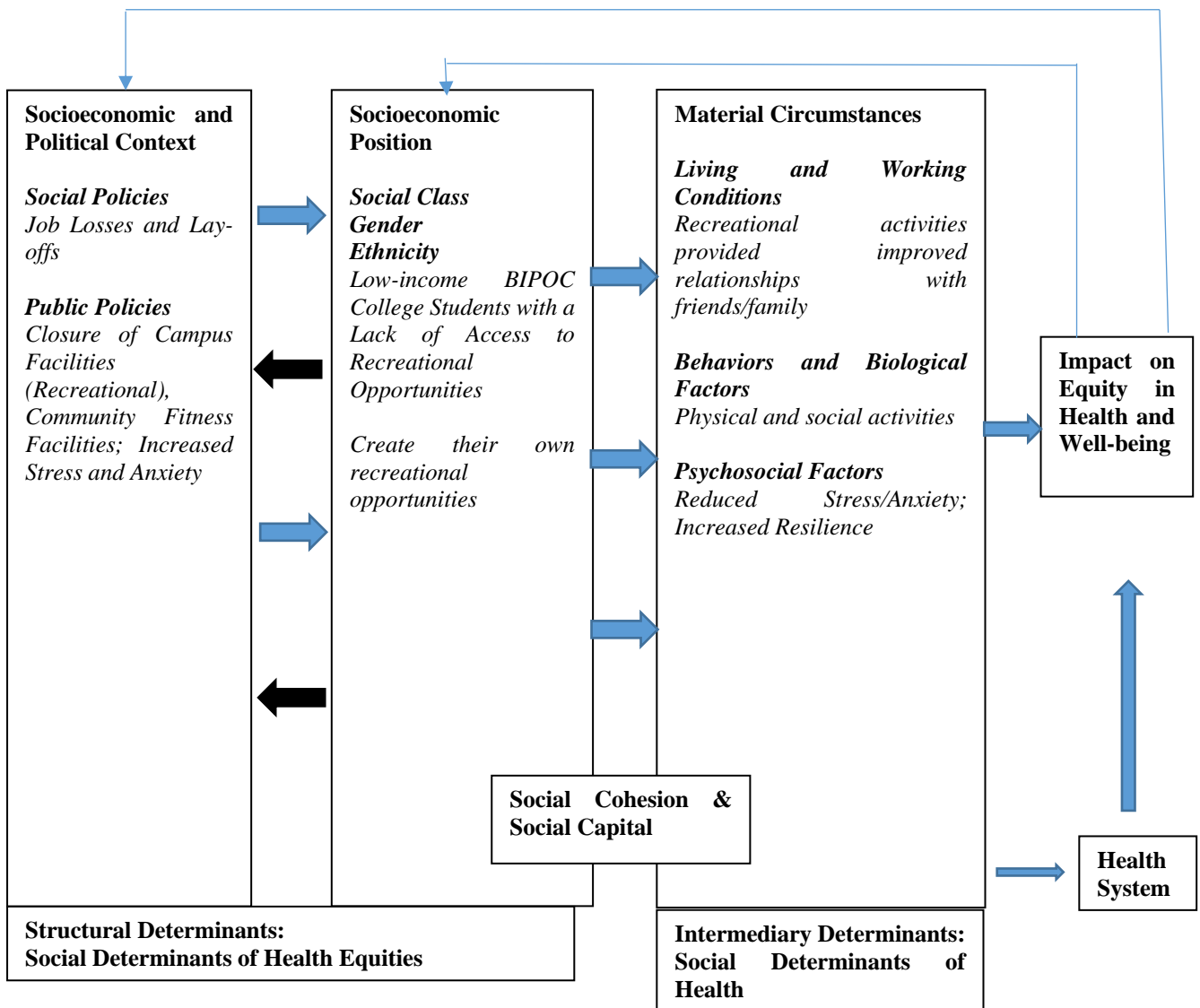


Figure 2. Findings Applied to the SDH Framework: Based on The World Health Organization’s Social Determinants of Health Framework (World Health Organization, 2010).

Barriers to Recreational Behaviors

Facility closures, family obligations, and injuries were just some of the barriers that existed for participants' recreational habits while other commitments, work, and school were barriers that mostly impacted the less active behaviors such as reading or watching television. Similarly, Ferguson et al. (2022) found that sociodemographic factors such as gender and income along with situational factors such as access and closures had an influence on an individual's recreational behavior. Participants' socioeconomic position along with social and public policies contributed to these barriers (World Health Organization, 2010). These findings are similar to recreational barriers that exist for incarcerated women (Camplain et al., 2022), military veterans (Herrmann et al., 2022), and individuals with learning disabilities (Haythorne et al., 2022). However, participants in this study overcame these barriers in a number of ways. Participants that mostly engaged in activities requiring access to a facility seemed to be more impacted by the pandemic than participants who engaged in more passive activities. Passive activities such as reading, writing, and listening to music were utilized when participants were restricted to their home and surrounding community. More physically active recreational activities require equipment, space, and appropriate facilities that participants did not have readily available to them once all non-essential facilities shut down, including their college campus. These environmental factors were similar to barriers found by Camplain et al. (2022), Haythorne et al. (2022), and Herrmann et al. (2022). Participants found that they had to motivate themselves, organize their time and nature of participation in each activity. This further shows the need for a departmental organization on every campus that is responsible for providing recreational opportunities to their students, or at least outreach to provide guidance on healthy behaviors, particularly during an acute health crisis where they are quarantined with only themselves and their families.

Recreational Behaviors

Recent studies have found that perceived risk, social norms, recommendations from authority, health benefits, and lifestyle adjustments are main influencers of an individual's recreational behavior during the COVID-19 pandemic (Ferguson et al., 2022; Mateer et al., 2021). The participants in this study reported a variety of different recreational behaviors including both individual and group activities that supported social cohesion and social capital. Social cohesion and social capital impacts both a person's socioeconomic position and their material circumstances (living and working conditions), behaviors and biological factors (barriers to recreation and ability), and psychosocial factors (stress and anxiety) (World Health Organization, 2010). Many recreational activities reported were biking, walking, boxing, and yoga. Interestingly, most recreational activities that participants engaged in occurred outside due to the shutdown of schools and local businesses. The outdoors became the best opportunity for recreation during the initial months of the pandemic, particularly in areas where schools and businesses closed and open space was more widely available (Curtis et al., 2022). Outdoor recreation increased during the pandemic and also served as a mediating factor that supported individuals' well-being, regardless of what the recreational behavior was (Fagerholm et al., 2021). Less active recreational activities included writing, drawing, reading, listening to music, and watching television. It seems that whatever the activity, participants engaged in it out of convenience due to their isolation. Participants still found something they could do to meet their recreational needs, even during a global pandemic.

Resilience

Participants spoke at great length about stress from time management, school, work, family obligations, bills, and living in New York City during the COVID-19 pandemic. Many reported high levels of stress (psychosocial factors) from before the pandemic yet attributed recreational activities (behaviors and biological factors) as the main stress reducer. Those that

mostly participated in more active recreational activities reported that it broke the cycle from being home, reduced stress from their academics, and provided a way to meet other people. Less active participants referred to their recreational activities as “escapism.” Several studies support the argument that college recreational facilities and participation work to reduce stress and anxiety in college students (Eubank & DeVita, 2021; Henchy, 2013; Soria et al., 2022; Worsley et al., 2022), however, the participants in this study did not have those resources during the COVID-19 pandemic. Studies focused on military veterans and outdoor recreation have found similar outcomes that supported their psychological well-being (Herrmann et al., 2022; Wheeler et al., 2020). Similarly participants who engaged in outside recreational activities due to environmental factors such as facility closures and limited space in their houses also experienced improvements in psychological well-being, which helped to reduce their stress levels.

Implications for Practice

This study demonstrated that the SDH Framework can be applied in the higher education setting to facilitate improved equity in health and well-being in college students, particularly during an acute health crisis. Although many campuses closed, or at least many recreational facilities closed, during the pandemic, it was clear that there was still a need for recreational activities for college students. Some colleges and universities adapted by bringing their services to the students, rather than students coming to them. One example of this outreach is through Zoom U, a popular phrase that has come up during the pandemic in higher education where university departments, such as campus recreation, provided activities through the Zoom platform. Purdue University provided cooking classes and virtual escape rooms via Zoom (Sedlar, n.d.). Similar to what many participants in this study took it upon themselves to do, Missouri State University’s department of campus recreation focused on outdoor activities and adventures such as day long trips to local hiking trails and other socially distant activities like golf (Sedlar, n.d.). Unfortunately, there was very little outreach that participants in this study received regarding recreation from their institution. For college students that live in an urban environment, such as New York City, there is limited outdoor space to utilize. Some participants in this study could no longer engage in their activities they normally enjoyed, or needed to change their routines in some way, due to the pandemic.

Many participants in this study reported an increased interest in recreation outside in open areas. With the limited open green space that New York City has to offer, the college could have provided opportunities on its campus, which has quite a bit of open space. Community outreach, education, and additional opportunities that other universities provided to their students could have benefited them as well. With many gyms and health clubs being closed due to the pandemic, the college also could have created partnerships with local businesses to hold recreational classes, such as group fitness, outside on its campus where social distancing was possible, benefiting both the local business and the students. However, governmental policies in reaction to the COVID-19 pandemic forced the college to close its campus instead.

Conclusion

This study demonstrated the importance of recreation in the lives of college students after the first year of the COVID-19 pandemic, how the SDH Framework can be applied to governmental response to an acute health crisis like COVID-19 and how that response impacts college students’ recreational behavior. The results of this study indicated an important role that units, or departments, responsible for providing recreational opportunities play in the lives of college students, such as campus recreation. The main objective of campus recreation is to market and provide opportunities to the college’s students through outreach initiatives in areas of aquatics, fitness, outdoor adventures, competitive sports, and even more passive activities

such as arts and crafts. Although the participants in this study were enrolled at a college that lacks such a unit or department, they found resilience through their own recreational opportunities. However, having a department and administrators whose priority it is to provide education and guidance may have resulted in greater persistence and resilience to many more students. This study demonstrated the important role that campus recreation plays in the lives of college students, particularly low-income BIPOC students attending a Hispanic-serving institution in urban areas. For these students, recreational activities were more important than ever during the COVID-19 pandemic. Higher education administrators would be wise to identify the barriers and influences on recreational engagement their own students are experiencing, what influences those activities have on their students, and how best to deliver those opportunities, particularly during an acute health crisis.

REFERENCES

- Airhihenbuwa, C. O., Iwelunmor, J., Munodawafa, D., Ford, C. L., Oni, T., Agyemang, C., Mota, C., Ikuomola, O. B., Simbayi, L., Fallah, M. P., Qian, Z., Makinwa, B., Niang, C., & Okosun, I. (2020). Culture matters in communicating the global response to COVID-19. *Preventing Chronic Disease, 17*. <https://doi.org/10.5888/pcd17.200245>
- American College Health Association. (2020). *American college health association-national college health assessment III: Undergraduate student reference group data report Fall 2019*. American College Health Association.
- Arundell, L., Salmon, J., Timperio, A., Sahlqvist, S., Uddin, R., Veitch, J., Ridgers, N. D., Brown, H., & Parker, K. (2022). Physical activity and active recreation before and during COVID-19: The our life at home study. *Journal of Science and Medicine in Sport, 25*(3), 235–241. <https://doi.org/10.1016/j.jsams.2021.10.004>
- Bennett, K. M., & Windle, G. (2015). The importance of not only individual, but also community and society factors in resilience in later life. *Behavioral and Brain Sciences, 38*, e94. <https://doi.org/10.1017/S0140525X14001459>
- Bialek, S., Boundy, E., Bowen, V., Chow, N., Cohn, A., Dowling, N., Ellington, S., Gierke, R., Hall, A., MacNeil, J., Patel, P., Peacock, G., Pilishvili, T., Razzaghi, H., Reed, N., Ritchey, M., & Sauber-Schatz, E. (2020). Severe outcomes among patients with Coronavirus Disease 2019 (COVID-19)—United States, February 12–March 16, 2020. *MMWR. Morbidity and Mortality Weekly Report, 69*(12), 343–346. <https://doi.org/10.15585/mmwr.mm6912e2>
- Borrega-Mouquinho, Y., Sánchez-Gómez, J., Fuentes-García, J. P., Collado-Mateo, D., & Villafaina, S. (2021). Effects of high-intensity interval training and moderate-intensity training on stress, depression, anxiety, and resilience in healthy adults during Coronavirus Disease 2019 confinement: A randomized controlled trial. *Frontiers in Psychology, 12*, 643069. <https://doi.org/10.3389/fpsyg.2021.643069>
- Browning, M. H. E. M., Larson, L. R., Sharaievska, I., Rigolon, A., McAnirlin, O., Mullenbach, L., Cloutier, S., Vu, T. M., Thomsen, J., Reigner, N., Metcalf, E. C., D'Antonio, A., Helbich, M., Bratman, G. N., & Alvarez, H. O. (2021). Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PLOS ONE, 16*(1), e0245327. <https://doi.org/10.1371/journal.pone.0245327>
- Burt, K. G., & Eubank, J.M. (2021). Optimism, resilience, and other health-protective factors among students during the COVID-19 pandemic. *Journal of Effective Teaching in Higher Education, 4*(1), 1–17. <https://doi.org/10.36021/jethe.v4i1.206>
- Çakır, G. (2023). The role of participation in sports and physical activity in the effects of negative emotions and COVID-19 on quality of life. *Journal of Education and Recreation Patterns, 4*(1), 58-74. <https://doi.org/10.53016/jerp.v4i1.111>
- Camplain, R., Williamson, H. J., Pinn, T. A., Shuman, S., Robinson, B. M., Evans, M., & Luna, C. (2022). Barriers and facilitators to attending and being physically active during

- recreation time among women incarcerated. *BMC Women's Health*, 22(1), 239. <https://doi.org/10.1186/s12905-022-01831-w>
- Carriedo, A., Cecchini, J. A., Fernández-Río, J., & Méndez-Giménez, A. (2020). Resilience and physical activity in people under home isolation due to COVID-19: A preliminary evaluation. *Mental Health and Physical Activity*, 19, 100361. <https://doi.org/10.1016/j.mhpa.2020.100361>
- Cazan, A.-M., & Truta, C. (2015). Stress, resilience, and life satisfaction in college students. *Revista de Cercetare Si Interventie Sociala*, 48, 16.
- Curtis, D. S., Rigolon, A., Schmalz, D. L., & Brown, B. B. (2022). Months of the COVID-19 pandemic: Getting out while staying in. *Environment and Behavior*, 54(2), 487–515.
- Data USA. (2022). <https://datausa.io/profile/university/cuny-lehman-college#enrollment>
- Denzin, N. K. (2017). *Sociological methods: A sourcebook*. Routledge.
- Ebersöhn, L., Eloff, I., Finestone, M., Grobler, A., & Moen, M. (2015). Telling stories and adding scores: Measuring resilience in young children affected by maternal HIV and AIDS. *African Journal of AIDS Research*, 14(3), 219–227. <https://doi.org/10.2989/16085906.2015.1052822>
- Elavsky, S., & McAuley, E. (2005). Physical activity, symptoms, esteem, and life satisfaction during menopause. *Maturitas*, 52(3–4), 374–385. <https://doi.org/10.1016/j.maturitas.2004.07.014>
- Eubank, J.M., & DeVita, J. (2015). Undergraduate student engagement in informal recreational swim: An exploratory study. *Recreational Sports Journal*, 39(2), 121–131. <https://doi.org/10.1123/rsj.2015-0018>
- Eubank, J.M., & DeVita, J. M. (2021). Informal recreation's relationship with college student stress and anxiety. *Journal of Student Affairs Research and Practice*, 58(5), 560–573. <https://doi.org/10.1080/19496591.2020.1822854>
- Eubank, J.M., & DeVita, J. M. (2023). Building sense of belonging through informal recreation participation. *SCHOLE: A Journal of Leisure Studies and Recreation Education*, 1–14. <https://doi.org/10.1080/1937156X.2023.2166434>
- Fagerholm, N., Eilola, S., & Arki, V. (2021). Outdoor recreation and nature's contribution to well-being in a pandemic situation—Case Turku, Finland. *Urban Forestry & Urban Greening*, 64, 127257. <https://doi.org/10.1016/j.ufug.2021.127257>
- Fang, Y., Zhu, L., Jiang, Y., & Wu, B. (2021). The immediate and subsequent effects of public health interventions for COVID-19 on the leisure and recreation industry. *Tourism Management*, 87, 104393. <https://doi.org/10.1016/j.tourman.2021.104393>
- Ferguson, M. D., Lynch, M. L., Evensen, D., Ferguson, L. A., Barcelona, R., Giles, G., & Leberman, M. (2022). The nature of the pandemic: Exploring the negative impacts of the COVID-19 pandemic upon recreation visitor behaviors and experiences in parks and protected areas. *Journal of Outdoor Recreation and Tourism*, 100498. <https://doi.org/10.1016/j.jort.2022.100498>
- Forrester, S. A., McAllister-Kenny, K., & Locker, M. (2018). Association between collegiate recreational sports involvement and undergraduate student retention. *Recreational Sports Journal*, 42(1), 64–74. <https://doi.org/10.1123/rsj.2017-0004>
- Freytas-Tamura, K. de, Hu, W., Cook, L. R., & Bhaskar, G. (2020, May 26). 'It's the death towers': How the Bronx became New York's virus hot spot. *The New York Times*. <https://www.nytimes.com/2020/05/26/nyregion/bronx-coronavirus-outbreak.html>
- Hatch, J. A. (2002). *Doing qualitative research in education settings*. State University of New York Press.
- Haythorne, R., Gega, L., Knapp, P., & Crawford, H. (2022). What are the barriers and facilitators to participation in active recreation for people with learning disabilities? A scoping review. *British Journal of Learning Disabilities*, 50(3), 350–363. <https://doi.org/10.1111/bld.12407>

- Henchy, A. (2013). The perceived benefits of participating in campus recreation programs and facilities: A comparison between undergraduate and graduate students. *Recreational Sports Journal*, 37(2), 97–105. <https://doi.org/10.1123/rsj.37.2.97>
- Herrmann, T. S., Bettmann, J. E., Sweeney, C., Marchand, W. R., Carlson, J., & Hanley, A. W. (2022). Military veterans' motivation and barriers to outdoor recreation participation. *Leisure Studies*, 1–18. <https://doi.org/10.1080/02614367.2022.2125556>
- Holba, A. M. (2014). In defense of leisure. *Communication Quarterly*, 62(2), 179–192. <https://doi.org/10.1080/01463373.2014.890117>
- Hoyt, L. T., Cohen, A. K., Dull, B., Maker Castro, E., & Yazdani, N. (2021). "Constant stress has become the new normal": Stress and anxiety inequalities among U.S. college students in the time of COVID-19. *Journal of Adolescent Health*, 68(2), 270–276. <https://doi.org/10.1016/j.jadohealth.2020.10.030>
- Jaureguizar, J., Garaigordobil, M., & Bernaras, E. (2018). Self-concept, social skills, and resilience as moderators of the relationship between stress and childhood depression. *School Mental Health*, 10(4), 488–499. <https://doi.org/10.1007/s12310-018-9268-1>
- Li, X., Yu, H., & Yang, N. (2021). The mediating role of resilience in the effects of physical exercise on college students' negative emotions during the COVID-19 epidemic. *Scientific Reports*, 11(1), 24510. <https://doi.org/10.1038/s41598-021-04336-y>
- Maloney, E. J., & Kim, J. (2020, May 21). *The Challenge of Equity in Higher Education Under COVID-19* | *Inside Higher Ed*. Inside Higher Ed. <https://www.insidehighered.com/blogs/learning-innovation/challenge-equity-higher-education-under-covid-19>
- Mateer, T. J., Rice, W. L., Taff, B. D., Lawhon, B., Reigner, N., & Newman, P. (2021). Psychosocial factors influencing outdoor recreation during the COVID-19 pandemic. *Frontiers in Sustainable Cities*, 3, 621029. <https://doi.org/10.3389/frsc.2021.621029>
- McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica*, 22(3), 276–282.
- Nurain, N., Huber, L., Caldeira, C., & Connelly, K. (2021). Exploring the "new normal": Older adults' coping strategies during COVID-19 pandemic. *Innovation in Aging*, 5(S1), 719.
- Oncescu, J., & Loewen, M. (2020). Community recreation provisions that support low-income families' access to recreation. *Leisure/Loisir*, 44(2), 279–302. <https://doi.org/10.1080/14927713.2020.1760120>
- Rice, W. L., Mateer, T. J., Reigner, N., Newman, P., Lawhon, B., & Taff, B. D. (2020). Changes in recreational behaviors of outdoor enthusiasts during the COVID-19 pandemic: Analysis across urban and rural communities. *Journal of Urban Ecology*, 6(1), juaa020. <https://doi.org/10.1093/jue/juaa020>
- Roeh, A., Lembeck, M., Papazova, I., Pross, B., Hansbauer, M., Schoenfeld, J., Haller, B., Halle, M., Falkai, P., Scherr, J., & Hasan, A. (2020). Marathon running improves mood and negative affect. *Journal of Psychiatric Research*, 130, 254–259. <https://doi.org/10.1016/j.jpsychires.2020.08.005>
- Sedlar, C. (n.d.). *How Are Campus Rec Departments Adapting to COVID-19? Where College Students Go for Golf*. Retrieved July 15, 2022, from <https://blog.nextgengolf.org/college-golf/how-are-campus-rec-departments-adapting-to-covid-19>
- Shen, X., MacDonald, M., Logan, S. W., Parkinson, C., Gorrell, L., & Hatfield, B. E. (2022). Leisure engagement during COVID-19 and its association with mental health and wellbeing in U.S. adults. *International Journal of Environmental Research and Public Health*, 19(3), 1081. <https://doi.org/10.3390/ijerph19031081>
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63–75. <https://doi.org/10.3233/EFI-2004-22201>

- Socio Cultural Research & Consultants, LLC. (2016). *Dedoose* (7.0.23). <https://www.dedoose.com/>
- Son, J. S., Nimrod, G., West, S. T., Janke, M. C., Liechty, T., & Naar, J. J. (2021). Promoting older adults' physical activity and social well-being during COVID-19. *Leisure Sciences*, 43(1–2), 287–294. <https://doi.org/10.1080/01490400.2020.1774015>
- Soria, K. M., Boettcher, B., & Hallahan, K. (2022). The effects of participation in recreational activities on students' resilience and sense of belonging. *Recreational Sports Journal*, 46(2), 184–192. <https://doi.org/10.1177/15588661221125201>
- Soylu, Y. (2021). The psychophysiological effects of the COVID-19 quarantine in the college students. *Physical Education of Students*, 25(3), 158–163. <https://doi.org/10.15561/20755279.2021.0303>
- Spies, G., & Seedat, S. (2014). Depression and resilience in women with HIV and early life stress: Does trauma play a mediating role? A cross-sectional study. *BMJ Open*, 4(2), e004200. <https://doi.org/10.1136/bmjopen-2013-004200>
- Stamatis, C. A., Broos, H. C., Hudiburgh, S. E., Dale, S. K., & Timpano, K. R. (2021). A longitudinal investigation of COVID-19 pandemic experiences and mental health among university students. *British Journal of Clinical Psychology*, bjc.12351. <https://doi.org/10.1111/bjc.12351>
- Stanton, R., To, Q. G., Khalesi, S., Williams, S. L., Alley, S. J., Thwaite, T. L., Fenning, A. S., & Vandelanotte, C. (2020). Depression, anxiety and stress during COVID-19: Associations with changes in physical activity, sleep, tobacco and alcohol use in Australian adults. *International Journal of Environmental Research and Public Health*, 17(11), 4065. <https://doi.org/10.3390/ijerph17114065>
- United States Census Bureau. (2022). *2020 Census*. Census.Gov. <https://www.census.gov/2020census>
- Van Dorn, A., Cooney, R. E., & Sabin, M. L. (2020). COVID-19 exacerbating inequalities in the US. *Lancet (London, England)*, 395(10232), 1243–1244. [https://doi.org/10.1016/S0140-6736\(20\)30893-X](https://doi.org/10.1016/S0140-6736(20)30893-X)
- Wheeler, M., Cooper, N. R., Andrews, L., Hacker Hughes, J., Juanchich, M., Rakow, T., & Orbell, S. (2020). Outdoor recreational activity experiences improve psychological wellbeing of military veterans with post-traumatic stress disorder: Positive findings from a pilot study and a randomised controlled trial. *PLOS ONE*, 15(11), e0241763. <https://doi.org/10.1371/journal.pone.0241763>
- World Health Organization. (2010). *A conceptual framework for action on the social determinants of health*. 76.
- Worsley, J. D., Pennington, A., & Corcoran, R. (2022). Supporting mental health and wellbeing of university and college students: A systematic review of review-level evidence of interventions. *PLOS ONE*, 17(7), e0266725. <https://doi.org/10.1371/journal.pone.0266725>

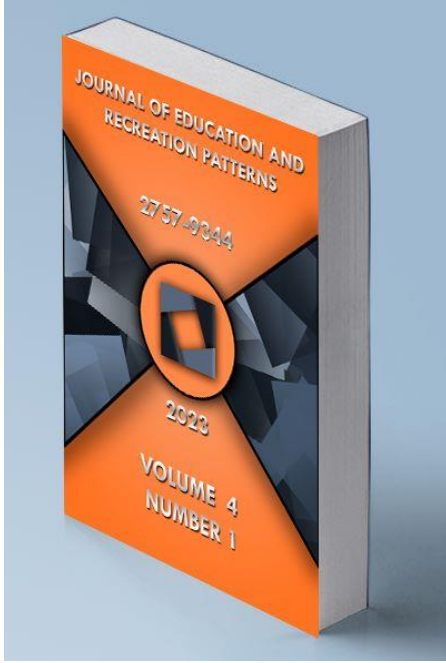
Copyright: © 2023 (Eubank, J.M. & Pegues, M.M.) This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com


Investigation of the Relationship between the Life Studies Lesson Attitudes and Critical Thinking Tendencies of Primary School 3rd-Grade Students


Emrullah AKCAN¹, Esra TEKKEŞİN²

To cite this article:

Akcan, E. & Tekkeşin, E. (2023). Investigation of the Relationship between the Life Studies Lesson Attitudes and Critical Thinking Tendencies of Primary School 3rd-Grade Students. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 210-228. DOI: <https://doi.org/10.53016/jerp.v4i1.98>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Emrullah AKCAN, Associate Professor Dr., Gaziantep University, Faculty of Education, emrullahakcan@gmail.com,  <https://orcid.org/0000-0002-5492-4159>

² Esra TEKKEŞİN, Master Student, Gaziantep University, Faculty of Education, tknesra@hotmail.com,  <https://orcid.org/0000-0003-2219-4996>

*The initial findings of the study were presented at the “6th EGE International Conference on Social Sciences” held in Izmir, Turkiye on September 10–11, 2022.

Investigation of the Relationship between the Life Studies Lesson Attitudes and Critical Thinking Tendencies of Primary School 3rd-Grade Students

Emrullah AKCAN¹, Esra TEKKEŞİN²

ARTICLE INFORMATION

Original Research Paper

Received 25.01. 2023

Accepted 29.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 210-228

ABSTRACT

The purpose of this study is to determine the level of relationship between the attitudes of 3rd-grade primary school students toward Life Studies lessons and their critical thinking tendencies. The correlational survey model, which is one of the quantitative research methods, was used in the research. The sample of the study consists of 401 "3rd-grade students" in the academic year 2021-2022. The study group was selected using the convenience sampling technique. "Life science lesson and students' attitudes scale" and "Critical thinking tendency scale for primary school students" were used to collect research data. The data obtained from the scales were analyzed using SPSS 22.00 statistical software. Normality distributions were examined to determine the test techniques to analyze the data. For this purpose, Kolmogorov-Smirnov, histogram graph, skewness, and kurtosis values were examined. As a result of the research, it was observed that the critical thinking tendencies of the 3rd-grade primary school students were higher than the attitudes of the Life Studies lesson and there was a low level, positive and significant relationship between them.

Keywords: Critical Thinking, Life Studies, Primary School.



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

When we think about what the term 'Life Studies' means, the first thing that comes to mind is the expression 'knowledge of life'. It is undoubtedly possible to provide children with this knowledge of life through education. It is through education that individuals acquire the knowledge, values, and skills they will need throughout their lives. The first step of the educational process begins in the family (Çelik and Gündoğan, 2020) and education is the child's knowledge and recognition of himself/herself with the knowledge of life that he/she has acquired. The child's self-knowledge is not only the recognition of his/her existence as an individual. It means knowing his/her family, environment, region, city, country, and the whole world (Tay, 2017). The next step in the educational process is the school-age which continues with some basic courses taken in primary school. One of these basic lessons that students take in primary school is the Life Studies lesson, which is taught in the first, second, and third grades (Çelik and Gündoğan, 2020). The aim of the Life Studies lesson is for students to get to know themselves, make decisions, and gain the skills necessary to sustain their lives and be in life with their existence as individuals (Sağlam, 2019). Thanks to the knowledge gained in this lesson, students; become individuals who have the basic values of society and their families, and can recognize themselves and the environment in which they live. They also become individuals who can recognize what they need to do to improve themselves, protect the environment and nature, use technology properly, be patriotic, and protect their history and cultural values (MEB, 2018).

The world is constantly changing, scientific and technological developments are very rapid, and the needs of society and individuals are also becoming different. The integration of technology into education has been rapid and unprecedented with advances in science (Ibrahim & Aydoğmuş, 2023). Based on the developments in today's world, education systems should be appropriately changed and renewed to produce individuals who can meet the needs of the age we live in (Meb 2018). Education systems should be equipped with 21st-century skills such as problem-solving, critical thinking, entrepreneurship, adaptation to innovation, high communication skills, and empathy, going beyond the mere transfer of information in the curriculum (Özdemir et al., 2021; Meb 2018). Children need to acquire these skills from primary school age. In this context, life studies lessons should confront children with the physical, technological and social realities of the world, carry the spirit of the time they are in (Karatekin, 2021), keep up with the changes in science and technology, and raise individuals with 21st-century skills (MEB, 2018).

Skills such as analytical thinking, problem-solving, human orientation, empathy, and critical thinking, which have an important place in the history of both the East and the West today and are expressed as 21st-century skills, are important skills from the past to the present (Özdemir, Turan and Çoban, 2021). Although expressed differently, these skills have always been important for people and societies. Recently, it has taken its place among the indispensable characteristics of our time, known as analytical and critical thinking skills (Lucas, Spencer, and Claxton, 2012; Miri, David, and Uri, 2007). For this reason, critical thinking has become one of the important skills that should be taught to students in schools (Yılmaz, 2021). Several researchers have conducted many studies related to critical thinking, improving students' skills and developing their thinking skills (King, Goodson, and Rohani, 2011; Krathwohl, 2002; Lopez and Whittington, 2001; Pickard, 2007; Yee, Widad, Jailani, Tee, Razali and Mohaffyza, 2011; Yunos, Kiong, Heong, Mohamad, Mohamad and Othman, 2010).

According to Richard Paul, critical thinking is "thinking about what you are thinking to improve your thinking as you think"; and according to Potts, "it is a way of thinking that does not accept any idea without examining its validity and accuracy". (cited in Yılmaz, 2021).

According to Dwyer, Hogan, and Stewart (2014), critical thinking is a metacognitive process that leads to possible solutions to the problems encountered and requires reflective thinking. It is the ability to think accurately, rationally, deeply, and independently (Yılmaz, 2013). It is stated that critical thinking skills are the most needed skills in education, work, and daily life (Heong et al., 2011). Critical thinking has three dimensions: the first is to ask questions, the second is to try to understand the logic of the questions asked, and the third is to believe in the results that our logic grasps (Nosich, 2018). People often take a negative attitude when they hear the words 'critical thinking'. In fact, critical thinking is not about criticizing people or their ideas. Critical thinking guides us about what information and new ideas are useful and what ideas need to be changed (Yılmaz, 2013). Since the social environment we live in affects our thinking, we may encounter obstacles in critical thinking (Nosich, 2018). The only way to overcome these obstacles we face is to acquire the right critical thinking skills.

Many researchers in their studies claimed a similar result on the role of teachers in developing students' critical thinking skills (Abad, 2013; Adeyemi, 2008; Agharuwhe and Nkechi, 2008; Ankiewicz, Adam, De Swardt and Gross, 2001; Dronkers, Robert and Fiesolana, 2003; Sellars, Fakirmohammad, Bui, Fishetti, Niyozov, Reynolds, et al., 2018; Shah and Udgaonkar, 2018; Heong et al., 2011; Virtanen, Raikkonen and Ikonen, 2015; Viswanadha, 2013; Woodring, 2020; Zhang, 2008). Most teachers and schools emphasize the importance of critical thinking skills but shy away from developing and using these skills (Loveland, 2019). The Life Studies lesson taught in the first, second, and third years of primary school is an important lesson that provides students with the basic skills necessary for their social lives and also prepares them for the disciplines of higher education (Oker, 2019). Critical thinking helps students to understand the lessons they are learning better and more in-depth (Sellars, Fakirmohammad, Bui, Fishetti, Niyozov, Reynolds, et al., 2018). It is known that critical thinking skills are among the skills that should be taught to students in the curriculum of life studies lessons, and it is one of the most frequently used 21st-century skills in life studies textbooks (Tay and Baş, 2015).

We live in a rapidly developing and changing world. Therefore, every country needs people who can inquire, examine the evidence, make correct and quick decisions, and think independently and critically (Ankiewicz, Adam, De Swardt, and Gross, 2001; Roehrig, Kruse, and Kern, 2007). In some studies in the literature, the following results were obtained. In the study in which the attitudes of 2nd and 3rd-grade primary school students toward Life Studies lessons were examined in terms of various variables, no significant difference was found between the attitudes of 2nd and 3rd-grade students towards Life Studies lessons (Çetin, 2020; Batmaz, 2021). In another study, it was found that as the level of students' attitudes toward life studies lessons increased, their social skills also increased (Sarı, 2020). Similarly, it has been determined that the different methods used in teaching the Life studies lesson increase students' attitudes towards this lesson (Hanbaba and Bektaş, 2012; Gündoğan, 2017; Ira, Ira, and Gecer, 2019; Bütün-Kar, 2021; Çayak, 2022; Baş, Işık-Tertemiz and Tay, 2021). It was found that third-grade primary school students generally have a positive attitude toward the Life Studies lesson and they want more extracurricular activities to be done during this lesson (Oker and Tay, 2019; Gündoğan, 2020). In another study, it was found that the academic success of 4th-grade students with high critical thinking skills was higher (Akar and Kara, 2016). In order to develop the critical thinking skills of 4th-grade students, it is necessary to minimize the behaviors that prevent students from thinking in the classroom environment (Özyurt, Baştıpçı, Barçın, Deviren and Atila, 2018). In a study conducted by Palavan (2012), there was no significant difference in students' attitudes towards the lesson in a third-grade life studies lesson where brain-based learning methods were applied, but there was a positive difference in students' critical thinking skills.

When reviewing the studies, it can be seen that most of the critical thinking studies were conducted on 4th-grade students (Akar and Kara, 2016; Özyurt et al., 2018; Yüksekbilgili, 2019; Hocaoğlu and Döş, 2021). However, no study has been conducted on third-grade students in which students' attitudes toward life studies lessons and critical thinking skills have been discussed together. Critical thinking, which is one of the 21st-century skills, is one of the important skills that students will need throughout their lives. The Life Studies lesson, which takes place from Year 1 of primary school, is one of the most appropriate lessons for students to acquire this skill. For this reason, the study is considered important and will contribute to the field. Through the Life Science course, critical thinking skills, like all high-level thinking skills, are tried to be acquired. Thanks to critical thinking skills, individuals will be able to easily keep up with the age. In order to gain this skill, a special importance should be given to the life science course. For this reason, this study is expected to contribute to the field by revealing the relationship between life science course and critical thinking skills.

Research shows that both the family and the environment play a role in the development of critical thinking skills. The question of whether environment or heredity is more effective in the development of an individual is often asked and discussed. In general, rather than saying that environment or heredity alone is effective, it is more accurate to say that for some traits environment and heredity are highly effective. For example, research shows that intelligence is generally influenced by heredity. However, some personality traits such as extraversion, perseverance and anxiety are less heritable than intelligence (Bacanlı, 1999). Environmental factors are one of the important factors that affect a person's critical thinking ability apart from hereditary factors. Family, society and school can affect an individual's critical thinking capacity (Tümekaya & Aybek, 2008). Therefore, it can be said that demographic variables have significant effects on critical thinking skills.

Aims of Study

This study aimed to examine the strength and nature of the relationship between the attitudes of 3rd-grade primary school students towards Life Studies lesson and their critical thinking skills, dispositions, or problem-solving abilities. In the context of this aim, the research questions are as follows:

A) The first two research questions pertain to the relationship between attitudes and critical thinking tendencies.

1- What are the levels attitudes of 3rd-grade primary school students toward the Life Studies lesson and their critical thinking tendency?

2- Is there a significant relationship between the attitudes of 3rd-grade primary school students towards the Life Studies lesson and their critical thinking tendency scores?

B) The following three questions relate to differences based on demographic variables.

3- Is there a significant difference between the attitudes of 3rd-grade primary school students towards the Life Studies lesson and their demographic variables?

4-Is there a significant difference between the critical thinking tendencies of 3rd-grade students and their demographic variables?

5-Is there a significant difference between the critical thinking dispositions of 3rd-grade students and their demographic variables?

METHOD

Research Model

Although critical thinking is important at all levels of education, it is especially important for students in primary school. For this reason, primary school courses should be related in a way that allows students to develop critical thinking skills. This study aims to investigate the relationship between the attitudes of 3rd-grade primary school students toward Life Studies lessons and their critical thinking tendencies. Based on this purpose, it has been structured on the quantitative research method. Quantitative research is defined as a positivist view that sees reality as independent of the researcher and accepts that it can be objectively observed, measured, and analyzed in its external reality (Büyüköztürk et al., 2016). In this study, it was designed according to the correlational model, which is one of the quantitative research methods. The correlational model, on the other hand, is a research model that can determine the relationship between variables and obtain information about two phenomena that are thought to be related to each other (Kuzu, 2013).

Sampling

The study group of this research consists of third-grade students in public schools in the central district of Kahramanmaraş in the Mediterranean region in the 2021-2022 school year. All public schools in the central district included in the sampling. The population of the research is 13716 third-grade students. The life studies lesson is available in the 1st, 2nd and 3rd primary school grades. This study included the oldest age group taking life science courses. The sample size was calculated as a minimum of 374 students with a margin of error of 5% and a probability of 95% (Baykul & Güzeller, 2020). This study was conducted with 401 students. Therefore, the number of samples is considered to be sufficiently representative of the population. The convenience sampling technique was used to determine the study group. In this method, each unit to be selected for sampling is given an equal probability of being selected. In other words, all individuals forming the population group are equal and have an independent chance of being selected, and the selection of individuals does not affect each other (Büyüköztürk et al., 2016). The frequency distribution of the data obtained regarding the socio-demographic characteristics of the students selected for the research is shown in Table 1.

Table 1. Frequency and Percentage Values of Students' Socio-Demographic Variables

Variables		f	%
Gender	Female	198	49.4
	Male	203	50.6
Mother Educational Level	Illiterate	4	1.0
	Primary school	48	12.0
	Secondary school	48	12.0
	High school	117	29.2
	University	184	45.9
Father Educational Level	Illiterate	2	0.5
	Primary school	23	5.7
	Secondary school	33	8.2
	High school	103	25.7
	University	240	59.9

Number of siblings	1	101	25.2
	2	142	35.4
	3	112	27.9
	4	41	10.2
	5 and 5+	5	1.2
Preschool Education Level	None	32	8.0
	1 year	186	46.4
	2 year	183	45.6
Book Reading Frequency	I never read	4	1.0
	I read once a week	78	19.5
	I read more than once a week	137	34.2
	I read once a month	3	0.7
	I read every day	179	44.6

Data Collection Tools

The data collection tools used in this study were the Life Studies Lesson Attitude Scale, developed by Oker and Tay (2020), to measure students' attitudes towards life science lessons, and the Critical Thinking Tendency Scale, developed by Uluçınar and Akar (2021), to measure students' critical thinking skills. Information about the data collection instruments is given below.

Life Studies Lesson Attitude Scale: In the research, the "Life Sciences Attitude Scale" developed by Oker and Tay (2020) was used to measure the attitudes of the 2nd and 3rd-grade students towards the Life Studies lesson. The scale is in a 3-point Likert type and consists of 16 items. There are three dimensions in the scale. These dimensions are; negative attitudes towards life studies lessons (6 items), positive attitudes towards life studies lesson content (5 items), and positive attitudes towards life studies lessons (5 items). It is seen that Cronbach's Alpha coefficient for the final version of the scale, which consists of 16 items, is 0.88. When the Cronbach Alpha coefficients for the sub-dimensions of the scale are examined; 0.77 for the first sub-dimension consisting of 6 items; 0.81 for the second sub-dimension consisting of 5 items; The Cronbach Alpha coefficient for the third sub-dimension consisting of 5 items was calculated as 0.71. The items were graded as "1. Disagree, 2. Partially Agree, 3. Agree". Some of the items in the scale are given below:

- Negative Attitudes Towards Life Studies Lesson:
-I think that the Life Sciences course is boring.
- Positive Attitudes towards Content of Life Studies Lesson:
- Life studies Lesson makes me realize my duties towards nature.
- Positive Attitudes Towards Life Studies Lesson:
- I feel peaceful in the life studies Lesson.

Critical Thinking Tendency Scale: The "Critical Thinking Tendency Scale" developed by Uluçınar and Akar (2021) was used to measure the critical thinking tendencies of 3rd and 4th-grade students in the study. The scale is in a 4-point Likert type and consists of 18 items. There are 4 dimensions in the scale. These dimensions are; maturity and open-mindedness (4 items), attentiveness and skepticism (5 items), inquisitiveness and questioning (5 items), bias and objectivity (4 items). According to the results of the reliability analysis of the scale, it is seen that the item-total correlations of the items in each dimension are above the predicted 0.250 value, and Cronbach's Alpha coefficients, which are the internal consistency parameters, are above 0.60. The items in the scale were graded as "1- Never, 2- Sometimes, 3- Often, 4- Always". Some of the items in the scale are given below:

- Maturity and Open-Minded:
 - Even if it seems wrong to me, I listen to what the other person says and try to understand.
- Skepticism:
 - I doubt the accuracy of the source of the information I have learned (book, television, internet, etc.).
- Curiosity and Questioning:
 - My friends, family, and teacher tell me that I am a curious person.
- Bias / Objectivity:
 - When two friends argue, I think my best friend is right.

Data Collection Process

In order to collect the data in the research, 401 primary school students of the 3rd grade participated in using the "Life science lesson and students' attitudes scale" and the "Critical thinking tendency scale for primary school students". All the necessary information was given to the teachers and students by the researchers. The scales were used during a life science lesson.

Analysis of Data

Normality distributions were examined to determine the test techniques to analyze the data. For this purpose, Kolmogorov-Smirnov, histogram graph, skewness, and kurtosis values were examined. As a result of the analyses, it was found that the scores of the sub-dimensions of the Life Studies Teaching Attitude Scale were horizontal, and the data were cleaned from extreme values according to the Z-test. The total score and sub-dimension scores of the Critical Thinking Tendencies Scale were found to be within normal ranges in terms of skewness and kurtosis. The results of the Kolmogorov-Smirnov normality test, performed because the data set was greater than 100, were significant ($p < 0.05$); it was observed that it did not show a normal distribution. Considering that this could be due to many data, histogram plots were examined. When the histogram graphs obtained were examined, it was found that the total scores of the Life Studies Teaching Attitude Scale and the sub-dimension scores showed a normal distribution. While the scores of the critical thinking tendencies scale and the sub-dimensions of cautious and skeptical, curious and questioning, unbiased and objective show a normal distribution, the sub-dimensions of maturity and open-mindedness show a left-skewed distribution. In addition, the histograms for gender, number of siblings, level of preschool education, and frequency of reading books showed a normal distribution, but the level of education of their mothers and fathers was skewed to the left. Therefore, while parametric tests were used for normally distributed data, non-parametric tests (Independent group T-Test, ANOVA, Kruskal-Wallis H Test, Independent Groups T-Tests) were used for non-normally distributed data.

Ethical Considerations

For the data collection, the interview participants were informed in writing of the study's nature and that there was no ramification if they decided to opt-out at any time. The interview instrument and consent information were hosted on the researchers' personal computer and safeguarded by a password. Study's participation resulted in minimal risks to respondents. In this study, all rules stated to be followed within the scope of "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. None of the actions stated under the title "Actions Against Scientific Research and Publication Ethics", which is the second part of the directive, were not taken. Ethical review board name: Gaziantep University Social Sciences and Humanities Ethics Committee. Date of ethics review decision: 04/01/2023. Ethics assessment document issue number: 283038.

FINDINGS

In this part of the research, the analyzes are presented. In addition, in this part of the study, the findings obtained by analyzing the responses of third grade students to the "Life Studies Lesson Attitude Scale" and "Critical Thinking Tendencies Scale" in line with the main and sub-purposes are presented.

Findings Related to the First Question of the Study

The descriptive results obtained as a result of the analysis of the first question are given in Table 2.

Table 2. Descriptive Results of Students' Life Studies lesson Attitudes and Critical Thinking tendency Levels

	n	Min.	Max.	\bar{X}	Sd
Level of Life Studies Lesson Attitude	401	24.00	42.00	34.1845	2.90876
Level of Critical Thinking Tendency	401	26.00	72.00	49.1920	7.35327

When Table 2. is examined, it can be seen that the student's attitudes towards the Life Studies lesson and their critical thinking tendencies levels are different. It can be seen that the mean level of critical thinking tendencies ($X^2=49.1920$) and the standard deviation score ($Sd=7.35327$) are higher than the attitude level of Life Studies lesson.

Findings Related to the Second Question of the Study

The correlational results obtained as a result of the analysis of the second question are given in Table 3.

Table 3. Correlational Results Between Students' Life Studies Lesson Attitude Scores and Critical Thinking Tendency Scores

	Life Studies Lesson Attitude	Critical Thinking Tendency
Life Studies Lesson Attitude		.231
p		.000**
n		401
Critical Thinking Tendency	.231	
p	.000**	
n	401	

**p<.05

When examining Table 3, it was found that there was a low, positive, and significant relationship between the students' attitudes toward the Life Studies lesson and their critical thinking tendencies ($r=0.231, p<.05$).

Findings Related to the Third Question of the Study

The independent groups' t-test results obtained as a result of the analysis of the gender among the demographic variables are given in Table 4.

Table 4. Independent group T-Test Results of Students' Attitudes Towards Life Studies Lesson for Gender

Gender	n	\bar{X}	S	Sd	t	P
Female	198	34.7323	2.91052	399	3.786	.000
Male	203	33.6502	2.81278	397.610	3.784	

Looking at Table 4, it can be seen that the average of the points ($X^2=34.7323$) of the female students in the attitude scale to life sciences teaching is higher than the average of the points of the male students ($X^2=33.6502$). When we looked at the "p" value to determine whether the difference between them was statistically significant, it was concluded that the difference between them was statistically significant ($p=0.000$, $p<0.05$). It was found that female students have a more positive attitude toward Life Studies lessons than male students.

The results of the one-way analysis of variance obtained as a result of the analyses made for the demographic variables of the number of siblings, the level of preschool education, and the frequency of reading books are presented in Table 5.

Table 5. ANOVA Results Regarding Students' Attitude Scores Towards Life Studies Lesson and Some Variables

Variables	n	\bar{x}	S	S.V	Sum of Squares	Sd	A.S	f	p
Number of Siblings	1 siblings	101	34.13	2.83					
	2 siblings	142	34.35	2.81	B.G.	28.02	4	7.007	0.827
	3 siblings	112	33.84	2.94	W.G.	3356.31	396	8.476	
	4 siblings	41	34.48	3.31	Total	3384.34	400		
	5 ve 5+	5	35.40	2.70					
Preschool Education Level	None	32	34.31	3.21	B.G.	2.06	2	1.032	
1 Year	186	34.23	3.02	W.G.	3382.28	398	8.498		
2 Year	183	34.10	2.73	Total	3384.34	400			
Frequency of Book Reading	I never read	4	34.75	3.20					0.428
	I read once a week	78	34.48	3.00	B.G.	14.55	4	3.638	
	I read more than once a week	137	33.98	2.98	W.G.	3369.79	396	8.510	
	I read once a month	3	34.66	1.52	Total	3384.34	400		
	I read every day	179	34.18	2.83					

When Table 5 is examined, it has been determined that none of the students' attitudes towards the Life Studies lesson on the demographic variables of the number of siblings, preschool education Level, and frequency of reading books do not show a significant difference.

The Kruskal-Wallis results obtained as a result of the analyzes made for the demographic variables of the mother's education level and father's education level are given in Table 6.

Table 6. The Results of the Kruskal-Wallis H Test on the Attitude Scores of the Students and the Variables of Educational Level of Their Fathers and Mothers

Variables	n	S.O	Sd	X ²	p
Mother	Illiterate	4	159.38		.604
	Primary school	48	211.45	4	
	Secondary school	48	217.32		
	High school	117	203.23		
	University	184	193.50		

Father	Illiterate	2	167.00	4	0.831	.934
	Primary school	23	192.13			
	Secondary school	33	214.53			
	High school	103	198.34			
	University	240	201.41			

As can be seen in Table 6., the 'Kruskal Wallis H' test was conducted to determine whether the students' Life Studies course attitude scores showed a significant difference according to the educational level of their fathers and mothers. As a result, no significant difference was found between students' Life Studies lesson attitude scores and the educational level of their fathers and mothers. ($X^2= 2.729$; $X^2= 0.831$, $p>0.05$).

Findings Related to the Fourth Question of the Study

The independent groups' t-test results obtained as a result of the analysis of the gender among the demographic variables are given in Table 7.

Table 7. Independent Groups T-Test Results of Students' Critical Thinking tendency for Gender

Gender	n	\bar{X}	S	Sd	t	P
Female	198	49.1061	7.24298	399	-0.231	.817
Male	203	49.2759	7.47622	398.982		

When Table 7 is examined, it is seen that the average scores of male students from the critical thinking tendency scale ($X^2=49.2759$) are higher than the average scores of female students ($X^2=49.1061$). When we looked at the "p" value to determine whether the difference between them was statistically significant, it was concluded that there was no significant difference ($p=0.817$, $p>0.05$).

The results of the one-way analysis of variance obtained as a result of the analyzes made for the demographic variables of the number of siblings, preschool education Level, and frequency of book reading are given in Table 8.

Table 8. ANOVA Results of Students' Critical Thinking Tendency and Some Variables

Variables	n	\bar{x}	S	S.V	S.S.	Sd	A.S	f	p	Difference
Number of siblings	1)1 sibling	101	50.90	7.98	B.G.	461.27	4	115.319	2.157	.073
	2)2 siblings	142	48.83	7.14	W.G.	21166.93	396	53.452		
	3)3 siblings	112	48.48	7.21	Total	21628.21	400			
	4)4 siblings	41	48.65	6.51						
	5)5 ve 5+	5	45.20	5.01						
Preschool education level	1)None	32	48.75	7.52	B.G.	39.40	2	19.702	0.363	.696
	2)1 Year	186	48.93	7.17	W.G.	21588.81	398	54.243		
	3)2 Year	183	49.53	7.52	Total	21628.21	400			
Frequency of book reading	1)I never read	4	51.50	7.93	B.G.	1166.20	4	291.551	5.642	.000*
	2)I read once a week	78	46.29	7.13	W.G.	20462.01	396	51.672		
	3)I read more than once a week	137	48.81	6.93	Total	21628.21	400			
	4)I read once a month	3	45.66	15.27						
	5)I read every day	179	50.74	7.24						

*p<.05

Looking at Table 8, the critical thinking tendencies of the students change according to the frequency of reading books. It can be seen that there is a significant difference ($p=0.000$, $p<0.05$) between the critical thinking tendencies of the students and the demographic variable of the frequency of reading books. According to the results of the Scheff f test, which was carried out to find out between which groups the difference in reading frequency times, it can be seen that there is a significant difference between reading a book every day and reading a book once a week. It was found that there was no significant difference between the number of siblings and the demographic variables of preschool education level and critical thinking tendencies of the students.

The Kruskal-Wallis results obtained as a result of the analyses carried out on the demographic variables of the mother's and father's educational level are presented in Table 9.

Table 9. The Results of the Kruskal-Wallis H Test on the Students' Critical Thinking Tendency Scores and the Variables of Educational Level of Mother and Fathers.

Variables	n	S.O	Sd	X ²	p
Mother	Illiterate	4	273.63		
	Primary school	48	191.17	4	4.608
	Secondary school	48	211.01		
	High school	117	187.29		
	University	184	208.09		
Father	Illiterate	2	356.75		
	Primary school	23	174.24	4	9.191
	Secondary school	33	175.86		
	High school	103	189.19		
	University	240	210.79		

As seen in Table 9, no significant difference was found between the education level of the mother/fathers and the students' critical thinking tendency scores ($X^2= 4.608$; $X^2=9.191$, $p>0.05$).

Findings Related to the Fifth Question of the Study

The Simple Linear Regression results obtained as a result of the analysis are presented in Table 10.

Table 10. Simple Linear Regression Results regarding the Predictions of Attitudes and Tendencies

	B	Standard error	β	t	p
Critical thinking tendency	0.091	0.019		4.734	.000**
Life Studies course attitude	0.583	0.123	0.231	4.734	.000**

R=231; R²=0.053; R²=0.051; F=22.406; p=.000

When Table 10 is examined, it is seen that students' attitudes towards the Life Studies lesson affect their critical thinking tendencies. According to the results of the regression analysis, it was determined that the attitudes of the students toward the Life Studies lesson had a statistically significant effect on their critical thinking tendency ($F=22.406$, $p=0.000$). Attitudes of students toward Life Studies lessons predict their critical thinking tendencies positively and significantly. Students' attitudes towards the Life Studies lesson have an effect of .05% on their critical thinking tendencies ($R^2= 0.053$).

The Multiple Linear Regression results obtained as a result of the analysis are presented in Table 11.

Table 11. Multiple Linear Regression Analysis Results Regarding the Prediction of Students' Attitudes Towards Life Studies Lesson to Critical Thinking Tendency

Dependent Variable	Independent variable	B	Standard error	β	t	p
	Constant	31.583	4.287		7.368	.000**
Critical Thinking Tendencies	Negative Attitudes Towards Life Studies Lesson	-0.332	0.241	-0.066	-1.374	.170
	Positive Attitudes Towards content of Life Studies Lesson	0.569	0.281	0.102	2.026	.043**
	Positive Attitudes Towards Life Studies Lesson	1.196	0.225	0.268	5.326	.000**

R=0.316; R²= 0.100; R²=0.093; F=14.686; p=0.000

Looking at Table 11, it can be seen that the variance explained by the variables that are significant at the $p < 0.01$ level regarding critical thinking tendencies is statistically significant ($F=14.686$, $p=0.000$). Looking at the results of the analysis, positive attitudes towards the content of the Life Studies lesson and positive attitudes towards the Life Studies lesson explain approximately 10% of the variance in the sub-dimensions. When the parameters of the regression model are examined, according to the standardized regression coefficient (β), the order of importance of the predictor variables on critical thinking tendencies; it is seen that positive attitudes towards the Life Studies lesson are in the form of positive attitudes towards the content of the Life Studies lesson and negative attitudes towards the Life Studies lesson. Considering all the variables, it was found that positive attitudes towards the Life Studies lesson and positive attitudes towards the content of the Life Studies lesson were significant predictors of critical thinking tendencies. It was found that the sub-dimension of negative attitude towards the Life Studies lesson was not a significant predictor. Regression equation (mathematical model) for predicting critical thinking tendencies according to the obtained regression results; "Critical thinking tendencies= 31.583 - 0.332 (Negative attitudes towards the Life Studies lesson) + 0.569 (Positive attitudes towards the content of the Life Studies lesson) + 1.196 (Positive attitudes towards the Life Studies lesson)".

DISCUSSION AND CONCLUSION

The aim of this study was to investigate the relationship between the attitudes of 3rd-grade primary school students towards the Life Studies course and their critical thinking tendencies. According to the findings of the study, when the attitudes and critical thinking tendencies of the 3rd-grade primary school students were examined, it was concluded that the critical thinking tendencies of the students were higher. It was found that there was a low, positive, and significant relationship between the students' attitudes toward Life Studies and their critical thinking tendencies. It was concluded that there was a positive relationship between students' attitudes towards the Life Science course and their critical thinking tendencies. Looking at similar studies in the literature, it can be said that primary school students generally have a positive attitude toward the Life Studies lesson (Oker and Tay, 2020; Sari, 2020). In the study conducted by Oker (2019), the attitudes of 2nd and 3rd-grade primary school students towards the Life Studies lesson were compared and it was found that the 3rd-grade students had a more positive attitude towards the lesson. In another study, a result in

favor of the 2nd-grade students was found (Çetin, 2020). Pennington (2021) states that perceptions and tendencies regarding a course, subject or phenomenon continue into adulthood. Students are asked to express their knowledge verbally. Thus, in the development of cognitive competence, different learning strategies based on dialogue and discussion that help thinking are used (Thibodeau & Hillman, 2003; Meister & Jenks, 2000). It has been found that students' attitudes towards the life studies lesson are positively affected by various methods used in the third grade of primary schools such as the jigsaw technique, analytical story method, Dunn learning style, story-based activities, scenario-based learning and authentic task-based learning (Ceylan, 2016; Gündoğan, 2017). Going beyond the traditional understanding and using critical thinking as the basis of the instructional processes carried out has a positive effect on the critical thinking skills of primary school students, their academic success, the persistence of instruction, and their attitude towards instruction. The results of this study are similar to other studies conducted on the impact of students on learning outcomes (Antecol et al., 2015; Ehrenberg, Winters, Haight, Swaim & Pickering, 1995). Some methods, such as brain-based learning, discussion techniques, and argument maps, have a positive effect on students' critical thinking skills (Palavan, 2012).

According to the results of the research, there is a significant positive difference among female students. In his study, Çetin (2020) examined the attitudes of 2nd and 3rd-grade primary school students towards the Life Studies lesson according to gender, compared them positively and negatively, and found that the result was in favor of male students in both cases. Sarı (2020), in his study conducted on 2nd and 3rd-grade primary school students, concluded that the attitudes of male students towards the Life Studies lesson are more positive than those of female students. It was found that there was no positive or negative difference in the attitudes of 3rd-grade students towards the Life Studies lesson according to the gender variable. Getting different results in different studies shows that gender is not a determining variable in attitudes toward the Life Studies lesson.

In this study, when the critical thinking tendencies of students were evaluated according to gender, it was found that the results were in favor of male students, but this situation was not statistically significant. In some of the studies conducted on fourth-grade students, different results were obtained that the gender variable did not affect critical thinking (Akar and Kara, 2016; Karasakaloğlu and Bulut, 2012; Yüksekbilgili, 2019). Some of the studies conducted on primary school students found the opposite results to this study and determined that the level of critical thinking skills of female students was higher than that of male students (Aydoğdu, 2020).

According to the research findings; When students' attitudes towards Life Studies lessons were analyzed according to demographic variables such as education level of mother/father, number of siblings, preschool education level, and frequency of reading books, it was concluded that none of these demographic variables affected students' attitudes towards Life Studies lesson. It can be seen that the mother's level of education and the number of siblings do not affect the attitudes of primary school students in grade 3 toward Life Studies, while the father's level of education has a negative effect on the students' attitudes towards Life Studies. It was found that the preschool education of the 2nd and 3rd-grade students and the educational level of the mother/father did not affect the attitudes toward the Life Studies lesson (Sarı, 2020).

Based on the research results, when the critical thinking tendencies of the students were analyzed according to demographic variables such as the educational level of the mother/father, the number of siblings, the level of preschool education, and the frequency of reading books, it was found that the frequency of reading books has a positive effect on the critical thinking tendency and there is a significant difference in favor of the students who read books every day and the students who read a book once a week. However, it was concluded that other demographic variables did not affect students' critical thinking tendencies. In studies with

similar results, it has been found that the fourth-grade students' attendance at kindergarten before starting primary school, the difference in the number of siblings, and the difference in the educational level of their parents do not affect their critical thinking abilities (Yüksekbilgili, 2019). Some studies have found that as the educational level of parents increases, the critical thinking skills of students increase, and the critical thinking skills of students who read more books increase (Okoli, 2017; Melnick & Meister, 2008; Siddig, Scherer & Tondeur, 2016). Kara (2019) concluded that the educational level of mothers did not affect students' critical thinking attitudes, but students whose fathers were high school graduates had higher critical thinking attitudes.

Recommendations

Based on the results of the research, it is believed that critical thinking is one of the most important skills that students should acquire. Technological and social developments in today's world show us that it is appropriate for students to acquire critical thinking skills at an earlier age. For this reason, critical thinking skills should be included more in the curriculum of Life Studies in the first, second, and third years of primary school. In addition, research can be conducted on the teaching of critical thinking to different groups of students. Considering those primary school teachers play a very important role in students' acquisition of critical thinking skills, in-service training programs can be conducted on how teachers can acquire critical thinking skills and what kind of methods they can use while teaching. The research can be carried out using the experimental method with experimental-control groups.

Limitations

Primary school 3rd grade students were included in this study. Primary school 1st, 2nd and 4th grade students were not included in the study. Another limitation of the study is that it was conducted in a single city center. In addition, the research results are based only on quantitative data.

REFERENCES

- Abad, J. V. (2013). Pedagogical factors that influence EFL teaching: Some considerations for teachers' professional development. *Profile - Issues in Teachers' Professional Development*, 15(1), 97-108. Retrieved from <http://www.scielo.org.co/pdf/prf/v15n1/v15n1a07.pdf> (Accessed 29 May 2022)
- Adeyemi, T. (2008). Influence of teachers' teaching experience on students' learning outcomes in secondary schools in Ondo State, Nigeria. *African Journal of Educational Studies in Mathematics and Sciences*, (5), 9-19. <https://doi.org/10.4314/ajesms.v5i1.38609>
- Agharuwhe, A. A., & Nkechi, M. U. (2008). An examination of gender's influence on teachers' productivity in secondary schools. *Journal of Social Sciences*, 17(3), 185-191. <https://doi.org/10.1080/09718923.2008.11892650>
- Akar, C. & Kara, M. (2016). The evaluation of 4ht elementary school students' critical thinking skills in terms of some variables. *International Journal of TLCE*, 5(3), 1339-1355. Retrieved from [230501 \(dergipark.org.tr\)](http://230501.dergipark.org.tr)
- Aktepe, V. & Gündüz, M. (2020). *Kuramdan uygulamaya Hayat Bilgisi öğretimi [Life Studies teaching from theory to practice]*. Pegem pub.
- Ankiewicz, P. J., Adam, F., De Swardt, A. E., & Gross, E. J. (2001). The facilitation of critical thinking in a technology education classroom. *Acta Academica*, 33(3), 188-206. <https://hdl.handle.net/10520/EJC15217>

- Antecol, H., Eren, O., & Ozbeklik, S. (2015). The effect of teacher gender on student achievement in primary school. *Journal of Labor Economics*, 33(1), 63-89. <https://doi.org/10.1086/677391>
- Bacanlı, H. (1999). *Eğitim Psikolojisi*. Kurtiş Matbaacılık.
- Baş, M., Işık Tertemiz, N. & Tay, B. (2021). The effects of integrated mathematics and life studies teaching on 3rd-grade students' attitude levels. *TAY Journal*, 5(2), 158-180. Retrieved from [2159014 \(dergipark.org.tr\)](https://dergipark.org.tr/2159014)
- Batmaz, O. (2020). Investigation of the relationship between the fun levels of primary school students in the life science course and their attitudes towards the course. *Neveşehir Hacı Bektaş Veli University Journal of ISS*, 11(3), 1535-1547. <https://doi.org/10.30783/nevsosbilen934527>
- Baykul, Y. & Güzeller C.O. (2020). *Sosyal Bilimler için istatistik: SPSS Uygulamalı [Statistics for Social Sciences: SPSS Applied]*. Pegem pub.
- Bütün-Kar, E. (2021). The effect of using concept cartoons in life science lessons on students' attitudes towards life science course. *Inonu University Journal of the Faculty of Education*, 22(2), 1291-1316. <https://doi.org/10.17679/inuefd.842099>
- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş. & Demirel, F. (2016). *Bilimsel araştırma yöntemleri [Scientific research methods]*. Pegem pub.
- Çayak, S. (2022). Investigation of Metaphorical Perceptions of University Students on the Concept of Sustainability. *Journal of Education and Recreation Patterns (JERP)*, 3 (1), 13-24. <https://doi.org/10.53016/jerp.v3i1.30>
- Çelik, Ö. & Gündoğan, A. (2020). Hayat Bilgisi dersinin amacı kapsamı ve içeriği [Purpose, scope and content of the Life Studies Lesson]. Vedat Aktepe & Mevlüt Gündüz (Ed.), *Kuramdan uygulamaya Hayat Bilgisi öğretimi [Life Studies teaching from theory to practice]*. Pegem pub.
- Çetin, B. (2020). Investigation of second and third-grade elementary school students' attitudes towards life science lessons in terms of various variables. *Trakya University Journal of Social Science*, 22(2), 989-1000. <https://doi.org/10.26468/trakyasobed.645269>
- Ceylan, T. (2016). *The effect of conceptual teaching through scenario-based learning in the course of social studies on the achievement, attitude, and retention of the students* [Master Dissertation]. Recep Tayyip Erdoğan University, Institute of Social Sciences. Rize.
- Dronkers, J., Robert, P., & Fiesolana, B. (2003). *The effectiveness of public and private schools from a comparative perspective*. Retrieved from [Microsoft Word - BS-Robert&Dron \(eui.eu\)](https://www.microsoft.com/en-eu/education/bs-robert&dron) (Accessed 15 July 2022).
- Dwyer, C. P., Hogan, M. J., & Stewart, I. (2014). An integrated critical thinking framework for the 21st century. *Thinking Skills and Creativity*, (12), 43-52. <https://doi.org/10.1016/j.tsc.2013.12.004>
- Ehrenberg, R. G., Goldhaber, D. D., & Brewer, D. J. (1995). Do teachers' race, gender, and ethnicity matter? Evidence from the national educational longitudinal study of 1988. *Industrial and Labor Relations Review*, 48(3), 547-561. <https://doi.org/10.1177/001979399504800312>
- Gündoğan, A. (2017). *The reflection of the attitudes and learning processes to learning environments with authentic tasks in life science class* [Doctoral Dissertation]. Anadolu University, Institute of Educational Sciences. Eskişehir
- Gündoğan, A. (2020). Life sciences course from primary school students' perspective. *AJESI-Anadolu Journal of Educational Sciences International*, 10(1), 31-53. <https://doi.org/10.18039/ajesi.681910>
- Hanbaba, L. & Bektaş, M. (2007). Oyunla öğretim yönteminin hayat bilgisi dersi başarısı ve tutumuna etkisi. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 12(1), 115-128. Retrieved from [16819 \(dergipark.org.tr\)](https://dergipark.org.tr/16819)

- Heong, Y. M., Othman, W. B., Yunos, J. B. M., Kiong, T. T., Hassan, R. B., & Mohamad, M. M. B. (2011). The level of marzano higher order thinking skills among technical education students. *International Journal of Social Science and Humanities*, 1(2), 121-125. <https://doi.org/10.7763/IJSSH.2011.V1.20>
- Hocaoğlu, M.E. & Döş, B. (2021). Investigation of the effect of the use of argument maps of primary school 4th grade students on critical thinking skills. *Journal of Interdisciplinary Educational Research*, 5(10), 204-220. Retrieved from <https://dergipark.org.tr/tr/download/article-file/2069107>
- Ibrahim, M. & Aydoğmuş, M. (2023). Examining ESL Preservice Teachers' Personal Factors That Best Predict Their Confidence to Integrate Technology in Future Classrooms. *Journal of Education and Recreation Patterns (JERP)*, 4(1), 134-152. <https://doi.org/10.53016/jerp.v4i1.127>
- Ira, N., Ira, G.O. & Gecer, A. (2019). The Effect of Life Science Activities Based on the Orff Approach on Students' Attitudes and Success Levels. *Mediterranean Journal of Educational Research*, 13(30), 270-287. <https://doi.org/10.29329/mjer.2019.218.16>
- Karasakaloğlu, N. & Bulut, B. (2012). The usage of literary texts as a tool of improving the ability of critical reading. *Buca Faculty of Education Journal*, (33), 95-106. Retrieved from [231593 \(dergipark.org.tr\)](https://dergipark.org.tr/231593)
- Karatekin, K. (2021). *Hayat Bilgisi öğretimi [Life Studies teaching]*. Vizetek pub.
- Kathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory Into Practice*, 41(4), 212-218. https://doi.org/10.1207/s15430421tip4104_2
- Kestel, M. & Şahin, M. (2018). Critical thinking in education. *Journal of Research in Education and Teaching*, 7(3), 40-49. Retrieved from [05.muharrem_kestel.pdf \(jret.org\)](https://www.muharrem-kestel.pdf)
- King, F., Goodson, L. & Rohani, F. (2011). Higher order thinking skills. Retrieved from [higher-order-thinking-skills .pdf \(wordpress.com\)](https://www.wordpress.com/higher-order-thinking-skills.pdf) (Accessed 18 June 2022).
- Kurt, A.A. (2013). Araştırmaların planlanması [Planning of studies]. A. Kuzu (Ed.), *Bilimsel Araştırma Yöntemleri [Scientific Research Methods.]* Anadolu University, Institute of Educational Sciences. Eskişehir.
- Lopez, J., & Whittington, M. S. (2001). Higher-order thinking in a college course: A case study. *Nacta Journal*, 45(4), 22-29. Retrieved from <https://www.jstor.org/stable/43765627> (Accessed 27 August 2022).
- Loveland, T. (2019). Instilling critical thinking in technology and engineering education students. *Technology and Engineering Teacher*, 78(8), 30-34. Retrieved from <https://eric.ed.gov/?id=EJ1214918> (Accessed 16 June 2022)
- Lucas, B., Spencer, E. & Claxton, G. (2012). *How to teach vocational education: A theory of vocational pedagogy*. London: City & Guilds Centre for Skills Development. Retrieved from <https://www.voced.edu.au/content/ngv%3A54758#> (Accessed 19 August 2022).
- MEB. (2018). *Hayat Bilgisi Dersi Öğretim Programı [Life Studies Curriculum]* (İlkokul ve Ortaokul 1,2, 3, 4, 5, 7 ve 8. Sınıflar). TTKB. Ankara: MEB pub.
- Meister, D. & Jenks, C. (2000). Making the transition from preservice to in service teaching: Beginning teachers' reflections. *Action in Teacher Education*, (22), 1-11. <https://doi.org/10.1080/01626620.2000.10463014>
- Melnick, S. & Meister, D. G. (2008). A comparison of beginning and experienced teachers' concerns. *Educational Research Quarterly*, 31, 39-56. <https://doi.org/10.1080/01626620.2000.10463014>
- Miri, B., David, B. C. & Uri, Z. (2007). Purposely teaching for the promotion of higher-order thinking skills: A case of critical thinking. *Research in Science Eduucation*, 37(4), 353-369. <https://doi.org/10.1007/s11165-006-9029-2>
- Nosich, G. M. (2018). *Disiplinlerarası eleştirel düşünme rehberi [A guide to interdisciplinary critical thinking]*. Anı pub.

- Oker, D. & Tay, B. (2019). Life science course from the eyes of primary school students and what they want to learn. *Journal of Education Theory and Practical Research*, 5(3), 409-425. <https://dergipark.org.tr/en/download/article-file/907219>
- Oker, D. & Tay, B. (2020). Developing an attitude scale for the life science lesson and students' attitudes. *Kalem International Journal of Education and Human Sciences*, 10(2), 731-756. <https://doi.org/10.23863/kalem.2020.173>
- Oker, D. (2019). *Developing an attitude scale for the life science course and students' attitudes and opinions about life science course* [Master Dissertation]. Ahi Evran University. Institute of Social Science. Kırşehir.
- Okoli, A. (2017). Relating communication competence to teaching effectiveness: Implication for teacher education. *Journal of Education and Practice*, 8(3), 150-154. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1131529.pdf> (Accessed 22 June 2022)
- Özdemir, N., Turan, S. & Çoban, Ö. (2021). *Rethinking 21st century schools*. Pegem pub.
- Özyurt, M., Baştopçu, G., Barçın, F., Deviren, G. & Atile, H. (2018). Analysis of Primary School Students' Critical Thinking Skills through Various Variables. *Kastamonu Education Journal*, 26(5), 1509-1518. <https://doi.org/10.24106/kefdergi.2132>
- Palavan, Ö. (2012). *The effects of brain-based learning on the achievement, attitude and critical thinking skills of students in social studies lesson* [PhD Dissertation]. Ondokuz Mayıs University, Institute of Educational Science. Samsun.
- Pennington, C.G. (2021). Commentary on the Impact of Teacher Appearance and Age on Student Attitudes. *Journal of Education and Recreation Patterns (JERP)*, 2(1), 47-55. <https://jerpatterns.com/index.php/jerp/article/view/7/12>
- Pickard, M. J. (2007). The new Bloom's taxonomy: An overview for family and consumer sciences. *Journal of Family & Consumer Sciences Education*, 25(1), 45-55. Retrieved from [Microsoft Word - v25no1Pickard.doc \(psu.edu\)](Microsoft Word - v25no1Pickard.doc (psu.edu)) (Accessed 22 June 2022)
- Roehrig, G., Kruse, R. A., & Kern, A. (2007). Teacher and school characteristics and their influence on curriculum implementation. *Journal of Research in Science Teaching*, 44(7), 883-907. <https://doi.org/10.1002/tea.20180>
- Sarı, S. (2020). *Examining the social skill levels of 2nd and 3rd grade primary school students and their attitudes towards life science course: The case of Kars and Bursa* [Master Dissertation]. Uludağ University, Institute of Educational Science. Bursa.
- Sellars, M., Fakirmohammad, R., Bui, L., Fishetti, J., Niyozov, S., Reynolds, R., et al. (2018). Conversations on critical thinking: Can critical thinking find its way forward as the skill set and mindset of the century? *Education Sciences*, 8(4), 1-29. <https://doi.org/10.3390/educsci8040205>
- Shah, S. R., & Udgaonkar, U. S. (2018). Influence of gender and age of teachers on teaching: Students perspective. *International Journal of Current Microbiology and Applied Sciences*, 7(1), 2436-2441. <https://doi.org/10.20546/ijemas.2018.701>
- Siddig, F., Scherer, R., & Tondeur, J. (2016). Teachers' emphasis on developing students' digital information and communication skills (TEDDICS): A new construct in 21st century education. *Computers & Education*, 92-93, 1-14. <https://doi.org/10.1016/j.compedu.2015.10.006>
- Tay, B. & Baş, M. (2015). Comparison of 2009 and 2015 life science course curricula. *Journal of Bayburt Education Faculty*, 10(2), 341-374. [159876 \(dergipark.org.tr\)](159876 (dergipark.org.tr))
- Tay, B. (2017). *Etkinlik örnekleriyle Hayat Bilgisi öğretimi [Life Studies teaching with practices examples]*. Pegem pub.
- Thibodeau, G. & Hillman, S. (2003). In retrospect: Teachers who made a difference from the perspective of preservice and experienced teachers. *Education*, 3(13), 124-169. Retrieved from <https://web.s.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=492795ac-760b-41b5-89df-57a492eac257%40redis> (Accessed 16 June 2022)

- Turan, R. (2019). İlkokulda insan hakları yurttaşlık ve demokrasi öğretimi [Teaching human rights, citizenship and democracy in primary school]. İ. Sağlam (Ed.), *Öğretmen adayları ve öğretmenler için insan hakları ve demokrasi eğitimi [Human rights and democracy education for teacher candidates and teachers.]*. Pegem pub.
- Tümkiye, D. D. S. & Aybek, D. B. (2008). Investigation of Critical Thinking Tendencies of University Students in terms of Socio-demographic Characteristics. *Çukurova University Journal of Institute of Social Sciences*, 17(2), 387-402. [Microsoft Word - 387-402.doc \(dergipark.org.tr\)](#)
- Uluçınar, U. & Akar, C. (2021). Critical thinking tendency scale for primary school students: A scale development study. *Journal of Third Sector Social Economy*, 56(3), 2031-2047. <https://doi.org/10.15659/3.sektör-sosyal-ekonomi.21.09.1673>
- Virtanen, S., Raikkonen, E. & Ikonen, P. (2015). Gender-based motivational differences in technology education. *International Journal of Technology and Design Education*, 25(2), 197-211. <https://doi.org/10.1007/s10798-014-9278-8>
- Viswanadha, G. P. (2013). Influence of attitude, school facilities and teacher characteristics on the performance of secondary school teachers working in rural areas. *International Journal of African and Asian Studies*, 2, 72-81. Retrieved from [\[模板\]JAAS Vol.2 \(core.ac.uk\)](#) (Accessed 12 June 2022)
- Woodring, J. (2020). *Younger teachers' perceptions of using online social networks for professional development. Curriculum Studies Summer Collaborative*. Retrieved from <https://digitalcommons.georgiasouthern.edu/cssc/2020/2020/9/> (Accessed 16 June 2022)
- Yee, M. H., Widad, O., Jailani, M. Y., Tee, T. K., Razali, H., & Mohaffyza, M. (2011). The level of marzano higher order thinking skills among technical education students. *International Journal of Social Science and Humanities*, 1(2), 121-125. Retrieved from <http://www.ijssh.org/papers/20-h009.pdf> (Accessed 22 June 2022)
- Yılmaz, K. (2021). *Eleştirel ve analitik düşünme [Critical and analytical thinking]*. Pegem pub.
- Yılmaz, S. (2013). Mini critical thinking guide. *Journal of History Culture and Art Research*, 2(1), 393-413. <https://doi.org/10.7596/taksad.v2i1.192>
- Yüksekbilgili, B. (2019). *Analyzing 4th grade students' critical thinking abilities and math success level [Master Dissertation]*. Gaziantep University, Institute of Educational Science. Gaziantep.
- Yunos, J. M., Kiong, T. T., Heong, Y. M., Mohamad, M. M. B., Mohamad, B. B., & Othman, W. B. (2010). The level of higher order thinking skills for lower secondary students in Malaysia. In *Proceedings of the 1st UPI international Conference on technical and vocational education and training* (pp. 10-11). Retrieved from [Scopus - Document details - null](#) (Accessed 15 August 2022).
- Zhang, D. (2008). *The effects of teacher education level, teaching experience, and teaching behaviours on student science achievement*. [PhD dissertation]. Utah State University. Retrieved from <http://digitalcommons.usu.edu/etd/155/>.

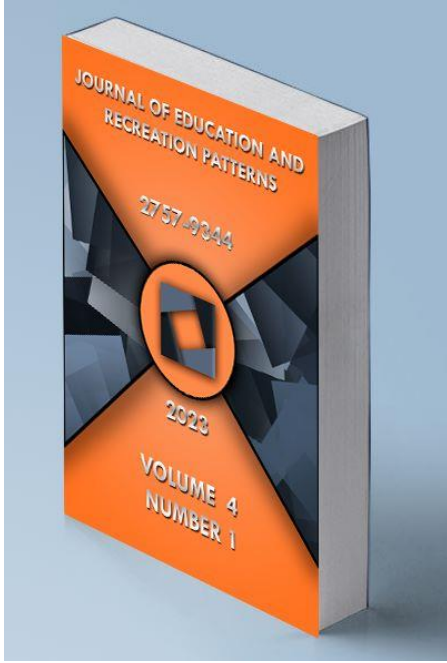
Copyright: © 2023 (Akcan, E. & Tekkeşin, E.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

Examination of the Service Quality Perceptions and Academic Engagement Levels of the Students of the Faculty of Sport Sciences

Volkan SURAL¹, Ali ERDOĞAN², Bekir ÇAR³, Erkan Faruk ŞİRİN⁴

To cite this article:

Sural, V., Erdoğan, A., Çar, B. & Şirin, E. F. (2023). Examination of the Service Quality Perceptions and Academic Engagement Levels of the Students of the Faculty of Sport Sciences. *Journal of Education and Recreation Patterns (JERP)*, 4(1), 229-247. DOI: <https://doi.org/10.53016/jerp.v4i1.131>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Volkan Sural, MoNE, volkansural75@gmail.com, [ID https://orcid.org/0000-0001-8943-235X](https://orcid.org/0000-0001-8943-235X)

² Ali Erdoğan, Karamanoğlu Mehmetbey University, Faculty of Sport Sciences, aerdogan@kmu.edu.tr,

[ID https://orcid.org/0000-0001-8306-5683](https://orcid.org/0000-0001-8306-5683)

³ Bekir Çar, Bandırma Onyedi Eylül University, Faculty of Sport Sciences, carbekir@gmail.com,

[ID https://orcid.org/0000-0001-7422-9543](https://orcid.org/0000-0001-7422-9543)

⁴ Erkan Faruk Şirin, Selçuk University, Faculty of Sport Sciences, erkanfaruk@yahoo.com,

[ID https://orcid.org/0000-0002-6837-7758](https://orcid.org/0000-0002-6837-7758)

Examination of the Service Quality Perceptions and Academic Engagement Levels of the Students of the Faculty of Sport Sciences

Volkan SURAL¹, Ali ERDOĞAN², Bekir ÇAR³, Erkan Faruk ŞİRİN⁴

ARTICLE INFORMATION

Original Research Paper

Received 18.05. 2023

Accepted 29.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 229-247

ABSTRACT

The purpose of this study is to examine the perceptions of service quality and academic engagement of athletic department students according to the variables of gender, age, department, class, type of education, athletic status, and origin from different states; to determine if there is a relationship between perceptions of service quality and academic engagement; and finally, to determine if service quality predicts academic engagement. The study was conducted using the survey model with quantitative approaches. 298 students of Karamanoğlu Mehmetbey University, Faculty of Physical Education voluntarily participated in the study. The service quality scale, academic engagement scale, and a personal information form prepared by the researchers were used for the study. The T-test, Analysis of Variance (ANOVA), Pearson's Correlation Coefficient, and Linear Regression analysis were used to analyse the data. According to the results, significant differences were found in the overall scale of service quality and/or its sub-dimensions depending on the variables other than the type of education. Significant differences were found in the academic engagement scale in relation to other variables, except for the variables of age and type of education. It was also found that there was a positive and moderately significant relationship between athletic department students' ratings on the quality of service scale and academic engagement. In addition, it was found that 22% of these students' academic engagement was determined by service quality and service quality was a significant contributor to the prediction of academic engagement. As indicated by the result, a high perception of service quality has a positive effect on academic engagement.

Keywords: Academic Engagement, Higher Education, Service Quality



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

Universities are institutions that produce science and thus serve humanity. Universities not only serve, but also have functions such as educating people, contributing to the formation of culture and civilization, and pioneering change. Therefore, it can be said that with their dynamic structure, they have the ability to form opinions in the society in which they live. They fulfill these functions with many units (faculties, colleges, etc.) within their institutions. One of these units is the sports science faculties. Sports science faculties are departments that contribute to the formation of sports policy, lead society to sports, teach healthy nutrition and healthy lifestyles, conduct scientific research to achieve a high level of efficiency in sports, and train sports personnel to fulfill these tasks. Recently, both the number of universities and the number of sports science faculties have increased in parallel with developments in the world and in Türkiye to increase awareness of exercise and sports. This quantitative increase has also brought competition to increase quality.

The growing number of faculties and colleges offering physical education in Turkish universities has increased the number of alternatives for students. Higher education institutions providing physical education can train a high-quality workforce under competitive conditions to ensure student loyalty and continuity of loyalty if they are supported by higher education administrations by being recommended, increasing student satisfaction levels, and improving service quality by improving the facilities they provide (Şirin et al., 2019). Students' quality expectations from the higher education institution where they will study are basically a multidimensional phenomenon. This phenomenon includes various dimensions such as the quality of education, physical spaces, application opportunities, social, cultural, and athletic opportunities, and individual characteristics of students (Saydan, 2008). In order for higher education institutions to meet these expectations, they must have certain service quality standards. Service quality can be defined as an indicator of the degree of satisfaction with the service provided to meet the demands and needs of consumers (Can, 2016). In other words, it is the ability of institutions to meet the expectations of consumers. Higher education institutions must measure these quality standards and detect their deficiencies, constantly work to improve them, and eliminate the identified deficiencies. After all, the higher the quality of an institution, the higher the quality of its results. Therefore, it is very important to measure quality and be able to produce a high quality product or service, both in terms of competition among companies producing goods and services and in terms of meeting the requirements and needs of their customers. Service quality in the university is a process that is created through the interaction of managers, academics, administrators and students. Since the basic service provided in higher education institutions is education, it involves different characteristics than in other sectors. This situation makes the evaluation of services provided in higher education institutions more complex.

Efforts to improve and develop higher education begin with finding solutions to the qualitative and quantitative problems of higher education institutions. Recruitment of students in accordance with employment opportunities, training of sufficient number and quality of faculty members, education, health, housing, social activities, recreation, problems of students' livelihood, internal organization of universities, compatibility of education with labor market are among the problems of higher education that have been widely discussed recently (Ozankaya, 1984). In order to speak of successful educational outcomes in higher education, universities should not only have and carry out qualified and rich educational practices, but also their students should strive to actively participate in the educational and training activities of the institution. Students' interests, desires, attitudes, values, and behaviours regarding the university and the education they receive affect their academic and

social compatibility with the university, which in turn is reflected in their attendance, academic development, and academic success. There is a significant positive relationship between organizational image and organizational commitment (Erdoğan & Sural, 2021). In this sense, belongingness, which results from students' harmony with the university's academic and social system, is an important component of students' school life because it is associated with success and personal development (Kızılkaya, 2021). Belonging can be interpreted as 'relevance', 'relationship', 'affiliation', 'relationship', 'affiliation' and 'association' (Alptekin, 2011). The concept of belonging is used in the same sense with similar concepts such as topophilia (attachment to a place at the level of love), identification with a place, entanglement with the environment, rootedness with that place, and union in the same feelings with the place (Brocato, 2006). In addition, belonging can develop to a person, a group, an institution, a culture, a society, an ethnicity, an identity, or a space or place (Duru, 2015). Student belonging is also the focus of research that examines student experiences in order to learn about the most important dimensions of higher education students' experiences. On the one hand, belonging continues to serve to make sense of students' experiences through the learning experience, and on the other hand, it is a very important mechanism for interpreting the relationship between the student and the institution and, more generally, the qualities and dynamics of higher education (Coates, 2006).

Academic engagement is defined by Fredricks et al. (2004) as psychological and behavioral learning initiatives of students that involve mastery of skills and knowledge in academic activities. In addition, several definitions of belonging have been proposed by researchers, including Skinner et al. (2009), who define belonging as the quality of a student's commitment to school activities, values, and goals. Student belonging is the commitment of students to work and participate in the educational environment to achieve their desired outcomes (Furlong & Christenson, 2008). School belonging is students' involvement in academic and non-academic activities and can be observed through their behavior, emotions, and cognitive aspects in school and the classroom in general (Fredricks et al., 2004). In addition, Henrie et al. (2015) suggest that academic engagement represents an engagement or attempt to be involved in the context of academic learning in school.

A country's high or low academic success is significantly influenced by many factors, including perceived service quality in educational institutions (Kasmin & Hii, 2017). Service quality is a comprehensive assessment of the strength and quality of learning services that students experience (Santos & Santos, 2003). Students who rate service quality as high believe that their needs are prioritised and met at the university. This creates the impression that the university fully supports them in their efforts to achieve high academic success. This may increase academic engagement. A careful review of the literature on university service quality and academic engagement /school affiliation reveals that there are few studies that examine the relationships between these concepts together. In Stodnick and Rogers' (2008) study using SERVQUAL to determine perceptions of service quality, it was found that students' perceptions of high service quality led to high levels of academic engagement. In another study conducted on this topic, a university's service quality was found to have a positive impact on academic motivation and academic engagement (Ilgan et al., 2013). In another study, among the dimensions of service quality, academic aspects and physical characteristics are the most important dimensions that explain the difference in the perception of school affiliation (Kutlu-Guendoğdu & Asan, 2019). In another study on this topic, a significant positive relationship was found between the five dimensions of the SERVQUAL scale service quality instrument and school affiliation. Furthermore, the study found that in addition to behaviours that increase satisfaction, improvements in timely responses to inquiries and helpfulness also increased students' academic engagement.

The service quality of higher education institutions is an important competitive factor. Moreover, it can be said that another competitive factor is academic engagement. In today's conditions, managing the process of change has become more important. In this context, learning, planning and implementing change is considered as a priority issue for the successful survival of an institution (Akyüz, 2006). In this context, institutional success and the creation of a productive environment are related to both the quality of institutional services and the individual's sense of belonging to the institution. The literature review revealed that while there are many studies that focus on the service quality of higher education institutions, the number of studies that focus on academic engagement and the relationship between service quality and academic engagement is quite limited. It is hypothesised that service quality contributes positively to the preference of higher education institutions and academic engagement. Consistent with this information, the purpose of this study is to examine the perceptions of service quality and academic engagement by students in the School of Sport Sciences in relation to several variables. In addition, in line with the results obtained, another aim of this research is to make recommendations to these institutions in order to increase the service quality provided in higher education institutions.

METHOD

This section includes the research model, research group, data collection tools, and data analysis.

Research Model

In this study, among the quantitative research methods, the survey model was used. In survey studies, existing situations are revealed through the description of the subjects (Büyüköztürk, 2018). This method, which is widely used in social sciences, was applied to study the sample group in terms of variables such as (gender, age, department, class, type of education, playing sports and coming from different provinces for university education).

Population and Sample

The population of this study consists of university students studying at Karamanoğlu Mehmetbey University Faculty of Sport Sciences. The sample consists of 298 university students who voluntarily accepted to fill in the data collection tools in line with the convenience sampling method. The demographic characteristics of the participants included in the study are shown in Table 1.

Table 1. Demographic Characteristics of Participants

Features	Categories	f	%
Gender	Male	180	60.4
	Female	118	39.6
Age	17-19 Age	54	18.1
	20-22 Age	170	57.0
	23-25 Age	59	19.8
	26 and higher	15	5.0
Department	Coaching Education	73	24.5
	Physical Education and Sports	80	26.8
	Sport Management	145	48.7
Type of Instruction	First Education	183	61.4
	Secondary Education	115	38.6
Sports Participation Status	Yes	229	76.8
	No	69	23.2
Coming to University from Another Province	Yes	207	69.5
	No	91	30.5

Grade Level	1. Grade	60	20.1
	2. Grade	34	11.4
	3. Grade	64	21.5
	4. Grade	140	47.0
Total		298	100,0

Data Collection Tools

For the purposes of this study, the Service Quality Scale, the Academic Engagement Scale, and the Personal Information Form created by the researchers were used. In the personal information form, there are items regarding the participants' gender, age, department, education level, participation in sports, class level and coming to the university from another province.

Service quality scale: in the scale developed by Erdoğan (2020) in his dissertation, a structure with 5 factors and 22 items was formed as a result of the analyses. Of the 22 items remaining in the scale, 6 were collected in the first factor, 5 in the second factor, 4 in the third factor, 4 in the fourth factor, and 3 in the fifth factor. The factor loadings of these 22 items ranged from .56 to .80, and in our analysis, the Cronbach's alpha ranged from .92 to .94.

Academic Engagement Scale: as a result of the exploratory and confirmatory factor analyses applied to the scale developed by Kızılkaya and Doğan (2022), a 25-item structure with three subdimensions emerged. The sub-dimensions were labelled as "participation in class, access to library and resources," "communication with faculty members," and "participation in scholarly and cultural activities." While the Cronbach's alpha reliability coefficient for the overall scale was .91, the Cronbach's alpha reliability coefficients for the individual subdimensions ranged from .78 to .90. In our analysis, the Cronbach's alpha ranged from .77 to .92.

Data Collection

Data for the study were collected online. The data collection instruments were prepared to allow online response collection through the Google Forms application, and then sent to the students of the Faculty of Sports Sciences in Karaman through the link address. The Ethics Committee Report for the study was approved by the Ethics Committee of Karamanoğlu-Mehmetbey University of Social Sciences.

Analysis of Data

All data collected by the students of the Faculty of Sports Sciences were carefully checked, and the data with erroneous and outlier values were removed from the data collected by 310 university students, and analyses of 298 data were performed. Descriptive statistics were used to examine whether the total and subfactor scores of the scales were normally distributed, and kurtosis skewness coefficients were used to determine that all subcategories of all independent variables in the total and subfactor scores of the scale were not normally distributed. According to Tabachnick and Fidell (2013), kurtosis and skewness values within the range of ± 1.5 are indicators of normal distribution. Since the Skewness value of the service quality scale was -.611 and the Kurtosis value was .592, and the Skewness value of the academic engagement scale was -.388 and the Kurtosis value was .478, parametric tests were used in the analyzes. The T-test, analysis of variance, Pearson's correlation coefficient, and linear regression analysis were used in the analysis of the data.

FINDINGS

This section includes the results obtained through the data collected.

Table 2. T-test Analysis of Service Quality and Academic Engagement Scale of the Students Studying at the Faculty of Sport Sciences According to Gender Variable

The Scale	Factors	Gender	n	\bar{X}	S	t	p
Service Quality Scale	Academic Appearance	Male	180	3,60	,91	-2.282	.023*
		Female	118	3,83	,76		
	Image	Male	180	3,05	1,06	-.535	.593
		Female	118	3,12	,98		
	Administrative Appearance	Male	180	3,41	1,00	-1.653	.099
		Female	118	3,60	,83		
	Access	Male	180	3,32	1,06	-.978	.329
		Female	118	3,43	,92		
	Empathy	Male	180	3,47	1,05	-1.094	.275
		Female	118	3,60	,97		
The Scale Wide	Male	180	3,37	,89	-1.513	.131	
	Female	118	3,52	,76			
Academic Engagement Scale	Class Attendance, Library, Resource Access	Male	180	3,33	,69	-3.101	.002*
		Female	118	3,58	,63		
	Communication with Faculty Members	Male	180	3,19	,96	-.325	.746
		Female	118	3,23	,88		
	Participation in Scientific and Cultural Events	Male	180	3,06	,92	.369	.712
		Female	118	3,02	,91		
	The Scale Wide	Male	180	3,20	,73	-1.059	.290
Female		118	3,29	,64			

* $p < 0.05$

Examining Table 2, according to the results of the T-test, a statistically significant difference was found in relation to the gender variable in academic appearance [$t(-2.282) = .023$; $p < 0.05$], the sub-dimension of the quality of service scale, and in class attendance, library, access to resources [$t(-3.101) = .002$; $p < 0.05$], the sub-dimension of the academic engagement scale. When analyzing the arithmetic means, it appears that female students scored higher than male students on both dimensions. When examining the results of the other sub-dimensions of the Quality of Service scale and the Academic Engagement Scale, as well as the overall scale, it was statistically determined that there was no significant difference between the genders ($p > 0.05$).

Table 3. T-test Analysis of Service Quality and Academic Engagement Scale of the Students Studying at the Faculty of Sport Sciences According to the Type of Education Variable

The Scale	Factors	Type of Instruction	n	\bar{X}	S	t	p
Service Quality Scale	Academic Appearance	First Education	183	3,64	,84	-1.365	.173
		Secondary Education	115	3,78	,89		
	Image	First Education	183	3,05	,98	-.587	.558
		Secondary Education	115	3,12	1,10		
	Administrative Appearance	First Education	183	3,50	,94	.399	.690
		Secondary Education	115	3,46	,950		

Access	First Education	183	3,34	,99	-.459	.646
	Secondary Education	115	3,40	1,02		
Empathy	First Education	183	3,47	1,03	-1.047	.296
	Secondary Education	115	3,60	1,00		
The Scale Wide	First Education	183	3,40	,82	-.734	.464
	Secondary Education	115	3,48	,88		
Class Attendance, Library, Resource Access	First Education	183	3,42	,69	-.140	.889
	Secondary Education	115	3,44	,67		
Communication with Faculty Members	First Education	183	3,16	,96	-.951	.343
	Secondary Education	115	3,27	,88		
Participation in Scientific and Cultural Events	First Education	183	3,02	,89	-.593	.553
	Secondary Education	115	3,09	,94		
The Scale Wide	First Education	183	3,21	,70	-.705	.482
	Secondary Education	115	3,27	,69		

When Table 3 is examined, it is concluded that there is no significant difference in the service quality scale and its sub-dimensions and academic engagement scale and its sub-dimensions in terms of the type of education variable according to the T-test results ($p>0.05$).

Table 4. T-test Analysis of the Service Quality and Academic Engagement Scale of the Students Studying at the Faculty of Sport Sciences According to the Variable of Sporting Status

The Scale	Factors	Sports Participation Status	n	\bar{X}	S	t	p
Service Quality Scale	Academic Appearance	Yes	229	3,74	,86	1.635	.103
		No	69	3,54	,84		
	Image	Yes	229	3,11	1,02	1.046	.297
		No	69	2,96	1,05		
	Administrative Appearance	Yes	229	3,54	,93	1.959	.051
		No	69	3,29	,98		
	Access	Yes	229	3,45	1,00	2.573	.011*
		No	69	3,09	,98		
	Empathy	Yes	229	3,61	1,01	2.741	.007*
		No	69	3,23	1,02		
	The Scale Wide	Yes	229	3,49	,85	2.158	.032*
		No	69	3,24	,80		
Academic Engagement Scale	Class Attendance, Library, Resource Access	Yes	229	3,47	,66	1.972	.050
		No	69	3,29	,73		
	Communication with Faculty Members	Yes	229	3,21	,89	.207	.836
		No	69	3,18	1,04		
	Participation in Scientific and Cultural Events	Yes	229	3,08	,90	1.153	.250
		No	69	2,94	,94		
	The Scale Wide	Yes	229	3,26	,67	1.264	.207
		No	69	3,14	,76		

* $p<0.05$

Examining Table 4, a statistically significant difference was found in the T-test results of the access [t(2.573)= .011; p<0.05] and empathy [t(2.741)= .007; p<0.05] subdimensions of the service quality scale and the service quality scale in general [t(2.158)= .032; p<0.05] with respect to the variable of playing sports. When analyzing the arithmetic means, it can be seen that those who participate in sports score higher than those who do not participate in sports in both sub-dimensions and in the whole scale. When analyzing the data from the other sub-dimensions of the quality of service scale and the overall academic engagement scale and its sub-dimensions, it was statistically determined that there was no significant difference in relation to the variable of playing sports (p > 0.05).

Table 5. T-test Analysis of Service Quality and Academic Engagement Scale of the Students Studying at the Faculty of Sport Sciences According to the Variable of Different City for University Education

The Scale	Factors	Another Province	n	\bar{X}	S	t	p
Service Quality Scale	Academic Appearance	Yes	207	3,76	,84	1.973	.049*
		No	91	3,54	,89		
	Image	Yes	207	3,09	1,03	.330	.742
		No	91	3,05	1,03		
	Administrative Appearance	Yes	207	3,51	,93	.772	.441
		No	91	3,42	,97		
	Access	Yes	207	3,45	,94	2.129	.034*
		No	91	3,18	1,12		
	Empathy	Yes	207	3,59	,97	1.802	.073
		No	91	3,36	1,11		
The Scale Wide	Yes	207	3,48	,82	1.556	.121	
	No	91	3,32	,88			
Academic Engagement Scale	Class Attendance, Library, Resource Access	Yes	207	3,46	,64	1.116	.265
		No	91	3,36	,76		
	Communication with Faculty Members	Yes	207	3,26	,90	1.535	.126
		No	91	3,08	,97		
	Participation in Scientific and Cultural Events	Yes	207	3,16	,90	3.125	.002*
		No	91	2,80	,90		
	The Scale Wide	Yes	207	3,30	,67	2.358	.019*
		No	91	3,09	,73		

*p<0.05

When the t-test results in Table 5 are analyzed, it is found that there is a significant difference in academic appearance [t(1.973)= .049; p<0.05] and Access [t(2.129)= .034; p<0.05], which are sub-dimensions of the service quality scale, in participation in scientific and cultural activities [t(3.125)= .002; p<0.05], which is one of the sub-dimensions of the academic engagement scale, and in academic engagement scale in general [t(2.358)= .019; p >0.05] according to the variable of coming from different provinces for university education. Considering the means of the groups, it was seen that students coming from outside the province for university education received higher scores than those coming from within the province. It was determined that there was no statistically significant difference in the overall service quality scale and other sub-dimensions and other sub-dimensions of the academic engagement scale according to the variable of coming from different provinces for university education. (p>0.05).

Table 6. ANOVA Test Analysis of Service Quality and Academic Engagement Scale of the Students Studying at the Faculty of Sport Sciences According to Age Variable

The Scale	Factors	Age Category	n	\bar{X}	S	Source of Variance	Sum of Squares	df	Mean Squares	F	p	Tukey	
Service Quality Scale	Academic Appearance	17-19 Age	54	4,05	,61	Intergroup	10,182	3	3,394	4,777	,003*	1-2	
		20-22 Age	170	3,58	,87	Intragroup	208,860	294	,710			1-3	
		23-25 Age	59	3,62	,95	Total	219,042	297					
		26 and higher	15	3,93	,79								
	Image	17-19 Age	54	3,54	,70	Intergroup	18,991	3	6,330	6,300	,000*	1-2	
		20-22 Age	170	2,97	1,03	Intragroup	295,415	294	1,005			1-3	
		23-25 Age	59	2,85	1,17	Total	314,406	297					
		26 and higher	15	3,48	,84								
	Administrative Appearance	17-19 Age	54	3,92	,56	Intergroup	18,541	3	6,180	7,384	,000*	1-2	
		20-22 Age	170	3,38	,96	Intragroup	246,071	294	,837			1-3	
		23-25 Age	59	3,27	1,11	Total	264,612	297					
		26 and higher	15	3,98	,47								
	Access	17-19 Age	54	3,85	,65	Intergroup	16,783	3	5,594	5,828	,001*	1-2	
		20-22 Age	170	3,24	1,02	Intragroup	282,212	294	,960			1-3	
		23-25 Age	59	3,23	1,13	Total	298,996	297					
		26 and higher	15	3,52	,85								
	Empathy	17-19 Age	54	4,06	,68	Intergroup	21,364	3	7,121	7,272	,000*	1-2	
		20-22 Age	170	3,39	1,02	Intragroup	287,917	294	,979			1-3	
		23-25 Age	59	3,33	1,20	Total	309,281	297					
		26 and higher	15	3,73	,61								
The Scale Wide	17-19 Age	54	3,88	,55	Intergroup	15,745	3	5,248	7,943	,000*	1-2		
	20-22 Age	170	3,32	,85	Intragroup	194,256	294	,661			1-3		
	23-25 Age	59	3,27	,95	Total	210,001	297						
	26 and higher	15	3,74	,62									
Academic Engagement Scale	Class Attendance, Library, Resource Access	17-19 Age	54	3,50	,54	Intergroup	,872	3					
		20-22 Age	170	3,40	,71	Intragroup	135,943	294	,291				
		23-25 Age	59	3,40	,74	Total	136,816	297	,462			,629	,597
		26 and higher	15	3,59	,50								
	Communication with Faculty Members	17-19 Age	54	3,06	,76	Intergroup	3,495	3		1,359	,255		
		20-22 Age	170	3,18	,94	Intragroup	251,983	294	1,165				
		23-25 Age	59	3,38	1,06	Total	255,478	297	,857				
		26 and higher	15	3,35	,75								
	Participation in Scientific and Cultural Events	17-19 Age	54	2,96	,83	Intergroup	5,070	3		2,057	,106		
		20-22 Age	170	3,00	,88	Intragroup	241,589	294	1,690				
		23-25 Age	59	3,31	1,06	Total	246,659	297	,822				
		26 and higher	15	2,93	,72								
The Scale Wide	17-19 Age	54	3,19	,51	Intergroup	1,423	3						
	20-22 Age	170	3,20	,71	Intragroup	141,808	294	,474					
	23-25 Age	59	3,37	,82	Total	143,231	297	,482			,983	,401	
	26 and higher	15	3,30	,49									

* $p < 0.05$; 1: 17-19 Age; 2: 20-22 Age; 3: 23-25 Age; 4: 26 and higher

When Table 6 is examined, the data obtained from the service quality scale sub-dimensions: academic appearance [F(4,777)=.003; $p < 0.05$], image [F(6,300)=.000; $p < 0.05$], administrative appearance [F(7,384)=.000; $p < 0.05$], access [F(5,828)=.001; $p < 0.05$] and empathy [F(7,242)=.000; $p < 0.05$] and the data obtained from the scale in general [F(7,943)=.000; $p < 0.05$]. When the arithmetic mean values are analyzed, it is seen that the students in the 17-19 age group received higher scores than the students in the 20-22 and 23-25 age groups. Although there was a significant difference in the overall and sub-dimensions of the service quality scale, there was no statistically significant difference in the overall and all sub-dimensions of the academic engagement scale.

Table 7. ANOVA Test Analysis of Service Quality and Academic Engagement Scale of Students Studying at the Faculty of Sport Sciences According to Class Variable

The Scale	Factors	Class Category	n	\bar{X}	S	Source of Variance	Sum of Squares	df	Mean Squares	F	p	Tukey
Service Quality Scale	Academic Appearance	1. Grade	60	4,08	,60	Intergroup	13,082	3	4,361	6,225 ,000*		1-2
		2. Grade	34	3,54	,78	Intragroup	205,960	294	,701			1-4
		3. Grade	64	3,74	,89	Total	219,042	297				
		4. Grade	140	3,54	,91							
	Image	1. Grade	60	3,44	,78	Intergroup	11,190	3	3,730	3,617 ,014*		1-4
		2. Grade	34	2,99	,96	Intragroup	303,216	294	1,031			
		3. Grade	64	3,10	1,07	Total	314,406	297				
		4. Grade	140	2,93	1,09							
	Administrative Appearance	1. Grade	60	3,92	,65	Intergroup	15,927	3	5,309	6,276 ,000*		1-4
		2. Grade	34	3,41	,85	Intragroup	248,685	294	,846			
		3. Grade	64	3,50	1,01	Total	264,612	297				
		4. Grade	140	3,31	,99							
	Access	1. Grade	60	3,83	,71	Intergroup	18,478	3	6,159	6,455 ,000*		1-2
		2. Grade	34	3,19	1,00	Intragroup	280,518	294	,954			1-4
		3. Grade	64	3,39	,98	Total	298,996	297				
		4. Grade	140	3,19	1,06							
	Empathy	1. Grade	60	4,09	,64	Intergroup	32,129	3	10,710	11,361,000*		1-2
		2. Grade	34	3,47	1,00	Intragroup	277,152	294	,943			1-4
		3. Grade	64	3,64	,92	Total	309,281	297				
		4. Grade	140	3,23	1,10							
The Scale Wide	1. Grade	60	3,86	,58	Intergroup	16,039	3	5,346	8,104 ,000*		1-2	
	2. Grade	34	3,32	,83	Intragroup	193,961	294	,660			1-4	
	3. Grade	64	3,47	,84	Total	210,001	297					
	4. Grade	140	3,25	,88								
Academic Engagement Scale	Class Attendance, Library, Resource Access	1. Grade	60	3,57	,56	Intergroup	2,507	3				
		2. Grade	34	3,26	,65	Intragroup	134,309	294	,836			
		3. Grade	64	3,36	,74	Total	136,816	297	,457			
		4. Grade	140	3,44	,70							
	Communication with Faculty Members	1. Grade	60	2,91	,91	Intergroup	9,605	3		3,202 ,836	3,829 ,010*	4-1
		2. Grade	34	3,01	,85	Intragroup	245,872	294				
		3. Grade	64	3,31	,81	Total	255,478	297				
		4. Grade	140	3,33	,97							
	Participation in Scientific and Cultural Events	1. Grade	60	2,89	,91	Intergroup	4,220	3		1,407 ,825	1,706 ,166	
		2. Grade	34	2,86	,87	Intragroup	242,438	294				
		3. Grade	64	3,07	,94	Total	246,659	297				
		4. Grade	140	3,15	,90							
	The Scale Wide	1. Grade	60	3,14	,63	Intergroup	2,504	3		,835 ,479	1,744 ,158	
		2. Grade	34	3,05	,68	Intragroup	140,727	294				
		3. Grade	64	3,25	,71	Total	143,231	297				
		4. Grade	140	3,31	,71							

*p<0.05

When Table 7 is examined, it is seen that there is a significant difference between the scores of the groups on the sub-dimensions of the service quality scale, namely academic appearance [F(6,225)=.000; p<0.05], access [F(6,455)=.000; p<0.05], empathy [F(11,361)=.000; p<0.05], image [F(3,617)= .014; p<0.05], administrative appearance [F(6,276)= .000; p<0.05] and the overall scale [F(8,104)= .000; p<0.05]. As a result of the analyses conducted to determine the source of the difference, it was determined that 1st year students scored significantly higher than 2nd and 4th year students in terms of academic appearance, access, empathy and scale general scores; and 1st year students scored significantly higher than 4th year students in terms of image and administrative appearance scores. When the scores obtained from interaction with faculty members [F(3,829)= .000; p<0.05], one of the sub-dimensions of the Academic Engagement Scale, were analyzed, it was concluded that 4th grade students scored statistically significantly higher than 1st grade

students. The scores obtained from the other sub-dimensions of the Academic Engagement Scale did not differ according to the groups.

Table 8. ANOVA Test Analysis of the Service Quality and Academic Engagement Scale of the Students Studying at the Faculty of Sport Sciences According to the Department Variable

The Scale	Factors	Department Category	n	\bar{X}	S	Source of Variance	Sum of Squares	df	Mean Squares	F	p	Tukey	
Service Quality Scale	Academic Appearance	Coaching Education	73	3,66	1,03	Intergroup	5,085	2	2,542	3,505	,031*	3-2	
		Physical Education and Sports Teaching	80	3,50	,85	Intragroup	213,957	295	,725				
		Sport Management	145	3,81	,75	Total	219,042	297					
	Image	Coaching Education	73	2,94	1,10	Intergroup	2,912	2	1,456	1,379	,254		
		Physical Education and Sports Teaching	80	3,03	1,02	Intragroup	311,494	295	1,056				
		Sport Management	145	3,17	,99	Total	314,406	297					
	Administrative Appearance	Coaching Education	73	3,46	1,07	Intergroup	3,154	2	1,577	1,779	,171		
		Physical Education and Sports Teaching	80	3,33	,97	Intragroup	261,458	295	,886				
		Sport Management	145	3,58	,85	Total	264,612	297					
	Access	Coaching Education	73	3,32	1,07	Intergroup	9,115	2	4,557	4,638	,010*	3-2	
		Physical Education and Sports Teaching	80	3,11	1,07	Intragroup	289,881	295	,983				
		Sport Management	145	3,53	,90	Total	298,996	297					
	Empathy	Coaching Education	73	3,48	1,11	Intergroup	6,947	2	3,473	3,389	,035*	3-2	
		Physical Education and Sports Teaching	80	3,30	1,06	Intragroup	302,334	295	1,025				
		Sport Management	145	3,66	,93	Total	309,281	297					
	The Scale Wide	Coaching Education	73	3,37	,96	Intergroup	4,589	2	2,294	3,295	,038*	3-2	
		Physical Education and Sports Teaching	80	3,26	,86	Intragroup	205,412	295	,696				
		Sport Management	145	3,55	,75	Total	210,001	297					
Academic Engagement Scale	Class Attendance, Library, Resource Access	Coaching Education	73	3,40	,77	Intergroup	,913	2		,991	,372		
		Physical Education and Sports Teaching	80	3,36	,71	Intragroup	135,903	295	,457 ,461				
		Sport Management	145	3,48	,61	Total	136,816	297					
	Communication with Faculty Members	Coaching Education	73	2,95	,94	Intergroup	9,757	2		4,879 ,833	5,857	,003*	3-1
		Physical Education and Sports Teaching	80	3,12	1,03	Intragroup	245,721	295					
		Sport Management				Total							

Participation in Scientific and Cultural Events	Sport Management	145	3,38	,83	Total	255,478	297			
	Coaching Education	73	2,72	,93	Intergroup	16,603	2			
	Physical Education and Sports Teaching	80	2,93	,88	Intragroup	230,055	295	8,302,780	10,645	,000*
The Scale Wide	Sport Management	145	3,28	,86	Total	246,659	297			
	Coaching Education	73	3,04	,73	Intergroup	6,728	2			
	Physical Education and Sports Teaching	80	3,14	,71	Intragroup	136,503	295	3,364,463	7,270	,001*
	Sport Management	145	3,38	,64	Total	143,231	297			

* $p < 0.05$; 1: Coaching Education; 2: Physical Education and Sports Teaching; 3: Sport Management

According to the results in Table 8, it was seen that there was a significant difference between the scores of the groups on the sub-dimensions of the service quality scale, namely academic appearance [$F(3,505) = .031$; $p < 0.05$], access [$F(4,638) = .010$; $p < 0.05$], empathy [$F(3,389) = .035$; $p < 0.05$] and the overall scale [$F(3,295) = .038$; $p < 0.05$]. As a result of the analyzes conducted to determine the source of the difference, it was determined that sports management students scored significantly higher than physical education and sports students in terms of their scores on these sub-dimensions.

When the scores obtained from the sub-dimensions of the Academic Engagement Scale are analyzed, it is seen that sport management students are statistically more likely than coaching education students in terms of the scores obtained from the interaction with faculty members sub-dimension [$F(5,857) = .003$; $p < 0.05$]; sport management students are statistically more likely than coaching education students in terms of the participation in scientific and cultural activities sub-dimension [$F(10,645) = .000$; $p < 0.05$] and the overall scale [$F(7,270) = .001$; $p < 0.05$], sports management students scored statistically significantly higher than coaching education and physical education students.

Table 9. Pearson Correlation Analysis According to Service Quality and Academic Engagement of Students Studying at the Faculty of Sport Sciences

Correlation	Service Quality Scale	Academic Engagement Scale
Service Quality Scale	1	.470**
Academic Engagement Scale	.470**	.000

** $p < 0.01$

When Table 9 is examined, as a result of the simple linear correlation analysis applied to reveal whether there is a relationship between the service quality and academic engagement scores of the students of the Faculty of Sport Sciences, it is concluded that there is a positive, moderately significant relationship ($r = 0.47$, $p < 0.01$).

Table 10. Linear Regression Analysis on Service Quality and Academic Engagement of Students Studying at the Faculty of Sport Sciences

The Scale	B	Se	β	t	P
Academic Engagement	1.903	.150		12.718	.001*
Service Quality	.388	.042	.470	9.165	.000*

$R = .470$; $R^2 = .221$; $F = 83.997$; * $p = 0.000$

When Table 10 is examined, it is seen that 22% of the academic engagement of the students studying at the Faculty of Sport Sciences is determined by service quality ($R=.470$; $R^2=.221$; $F=83.997$; $p=0.000$). As a result of the statistical inferences made for the data, it was seen that service quality made a significant contribution to the prediction of academic engagement.

DISCUSSION AND CONCLUSION

One of the factors that students who want to receive a university education consider when choosing a higher education institution is the service quality of the educational institution. Service quality plays a very important role both in choosing a higher education institution and in continuing studies at the same institution. The service quality of higher education institutions is considered as an important competitive factor. Moreover, it can be said that another factor influencing competition is academic engagement. In this direction, the research aims to investigate the perception of service quality and academic engagement of students studying in sports science faculties in relation to variables such as gender, age, department, class, type of education, playing sports, and coming from different provinces for university education. Another objective of the study is to show the relationship between perceived service quality and academic engagement, and to determine the predictive status of service quality for academic engagement.

In evaluating the research results primarily by gender, a statistically significant difference was found in academic appearance, the sub-dimension of the Quality of Service scale, and in class attendance, library, and access to resources, the sub-dimension of the Academic Engagement Scale. Female students scored higher than male students on both dimensions. When analyzing the results of the other sub-dimensions of the Quality of Service Scale and the Academic Engagement Scale, as well as the overall scale, it was statistically determined that there was no significant difference between the genders. During the literature review, it was found that there are many studies in both the national and international literature that support this research finding. Pike and Kuh (2005) examined the affiliation and intellectual development of college students as a function of some demographic variables (gender, ethnicity, desire to pursue a college degree, campus residency status) and concluded that academic engagement was significantly higher among female students. Similar results were also found when examining data from students at three public universities in Pakistan. In this study, female students were found to have a higher sense of belonging, higher locus of control, and perform better academically than male students (Sarwar & Ashrafi, 2014). It can be seen that studies on academic engagement are quite limited in the national literature. It was found that the studies on affiliation mostly focus on institutional affiliation. In a dissertation conducted by Kızılkaya (2021), the same result was found with this research. In both studies, there is a significant difference between female and male students on the dimensions of 'class participation, library, access to resources' in favor of female students. In addition, in a study to determine the degree of institutional engagement of academic staff, it was found that male participants scored higher and differed significantly, contrary to the research results. When analyzing the studies on perceptions of service quality with regard to the gender variable, it is found that there are studies that are consistent with this study. In another study, it was found that male students had lower perceptions of quality than female students (Karakaya et al., 2016). Similar to the results of this study, Bayrak (2007) concluded in his doctoral study of higher education institutions that female students' perceptions of service quality were significantly different from those of male students and had higher scores. In addition to the results of the research conducted with college students, similar results were also obtained in studies with students from lower age groups. In a study conducted by Orman

(2019) with a group of students aged 6 to 18, it was found that the sense of belonging differs in favor of female students. Although there are studies in the literature that support this research, there are studies in which males scored higher than females (Devebakan et al., 2019; Yokuş et al., 2016) and studies that concluded that there was no significant difference for both groups (Kaban, 2022; Topsakal & İplik, 2013; Yavuz & Gülmez, 2016).

According to another result, it was found that there was no significant difference in the scale of service quality and its sub-dimensions and the scale of academic engagement and its sub-dimensions in relation to the type of education. The literature found that studies examining perceptions of service quality and academic engagement as a function of type of education are quite limited. The literature search revealed that the study by Ataman and Adıgüzel (2019) and Kaban (2022) concluded that the affiliation of undergraduate or graduate education did not make a significant difference in the perception of quality. However, in another study, it was found that undergraduate students had higher perceptions of service quality than graduate students (Altaş, 2006).

Another result of the study is that a statistically significant difference was found between the access and empathy sub-dimensions of the service quality scale and the service quality scale in general in relation to the variable "playing sports". This shows that in both sub-dimensions and in the whole scale, those who play sports score higher than those who do not play sports. In contrast to this study, the studies by Kaban (2022) and Yavaşer and Yurtsizoğlu (2022) found that athletes' perceptions of service quality are low. It is suggested that this is due to the high expectation of service quality.

When examining the results related to the variable of origin from another province, it was found that there was a significant difference in terms of academic appearance and access (sub-dimensions of the Quality of Service scale) and participation in scientific and cultural activities and academic engagement (sub-dimensions of the Academic Engagement Scale). It was found that students who come from outside the province to pursue higher education studies scored higher than those who come from within the province. It is believed that the reason for this is that students from other provinces participate more in cultural activities to socialise. No source on this research result was found in the literature review.

A significant difference was found in the age variable. Thus, it was found that students in the 17-19 age group received higher scores than students in the 20-22 and 23-25 age groups. In contrast to this study, there are also studies that conclude that as the age of students increases, their perception of the service quality of their universities also increases (Bayrak, 2007). When analyzing the results for the class level variable, which is directly proportional to age, it can be seen that the results are parallel and mutually supportive. It was found that there is a significant difference between the results of the sub-dimensions of the service quality scale, namely academic demeanor, empathy, image, administrative demeanor and the overall scale. It was found that 1st grade students scored significantly higher than 2nd and 4th grade students on academic appearance, access, empathy, and total scale scores. Contrary studies were found in the literature (Kaban, 2022). In another study, it was found that there was no significant difference between perceptions of service quality and grade levels (Karakaya et al., 2016). When analyzing scores for faculty interaction, one of the sub-dimensions of the Academic Engagement Scale, it was found that students in the 4th grade were more likely to be engaged in academic activities. The results of this study show that as age and grade level increase, perceptions of service quality decrease, but academic engagement increases. In other words, age and grade level are directly proportional to academic engagement and inversely proportional to perceptions of service quality.

The results of the student ratings by department show that there is a significant difference between the ratings in the sub-dimensions of the Quality of Service, Academic Appearance, Empathy scale and the overall scale. It was found that students in the Sport Management Department scored higher than students in the Physical Education and Sport Department. In addition, it was concluded from the results of the sub-dimension Interaction with Lecturers that the students of the Department of Sport Management scored statistically significantly higher than the students of the Department of Physical Education; and it was concluded from the results of the sub-dimension Participation in Scientific and Cultural Activities and the Total Scale that the students of the Department of Sport Management scored statistically significantly higher than the students of the Department of Physical Education and Sport. Similarly, in a study conducted by Kaban (2022), it was found that the perception of service quality by the students of the Department of Sport Management was higher than the students of other departments. The reason for this result was that the social and cultural activities conducted in schools were more satisfying to the students of sport management department because the teaching content of sport management department was insufficient in terms of sport and socialization. This result supports the research.

Finally, simple linear correlation and regression tests were conducted to determine if there was a relationship between service quality and academic engagement of students in the School of Physical Education, and if so, the direction of that relationship. The results of these tests suggest that there is a positive and moderately significant relationship between service quality and the academic engagement scores of the Faculty of Sport Sciences students. In addition, it was found that 22% of the academic engagement of the students of the Faculty of Sport Sciences was determined by the service quality and the service quality made a significant contribution to the prediction of the academic engagement. As can be seen from the result, high perception of service quality has a positive effect on academic engagement. Related literature studies support the research results (Stodnick & Rogers 2008; Ilgan et al. 2013; Kutlu Guendoğdu & Asan, 2019). In these studies, students' perceptions of high service quality were found to lead to high levels of academic engagement. In addition, Kızılkaya (2021) found in his doctoral study that students' academic engagement decreased the lower their perception of service quality was. These results support the research. In another study conducted with undergraduates, parallel to this finding, it was found that perception of organizational image was a significant predictor of sense of institutional belonging (Orman, 2019).

Recommendations and Limitations

The limitation of the college and the faculty where the data and information in the study were collected to the Faculty of Sports Sciences of Karamanoğlu Mehmetbey University prevents the generalization of the obtained results. However, despite these limitations, the study can provide an impression of the perception levels of students in the Faculty of Sports Sciences and serve as a reference for future studies. Studies can be conducted at different universities, in different departments and samples, and in different cultures. In order for universities to develop demand strategies, marketing strategies should be developed to increase student affiliation and identification and, indirectly, perceptions of quality. This study is limited to five dimensions of service quality and three affiliation variables that affect the academic engagement of athletic department students. Future studies may examine the effect of different variables in explaining academic engagement. In future studies, it may be useful to examine the impact of college-provided services on other positive organizational behaviors and attitudes (faculty engagement, satisfaction, academic performance, motivation, etc.), taking into account the impact of college-provided services on affiliation.

REFERENCES

- Alptekin, D. (2011). *Toplumsal aidiyet ve gençlik: Gençliğin aidiyeti üzerine sosyolojik bir araştırma* [Social engagement and youth: A sociological research on youth engagement]. (Doctoral thesis). Selçuk University, Türkiye.
- Altaş, D. (2006). Üniversite öğrencileri memnuniyet araştırması [University student satisfaction survey]. *Marmara University Journal of Economic and Administrative Sciences*, 21(1), 439-458.
- Bayrak, B. (2007). *Yükseköğretim kurumlarından beklenen hizmet kalitesi ve hizmet kalitesinin algılanmasına yönelik bir araştırma*. [Measuring expected service quality from higher education institutions and a research of perceived service quality] (Doctoral thesis). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
- Brocato, E. D. (2006). *Place attachment: An investigation of environments and outcomes in service context*. (Doctoral thesis). The University of Texas The Faculty of the Graduate School, Arlington.
- Brown, Jr., C.V. (2014). *Service quality as a predictor for academic engagement, academic performance, and student satisfaction*. Department of Educational Leadership, December.
- Büyüköztürk, Ş. (2018). *Sosyal bilimler için veri analizi el kitabı: İstatistik, araştırma deseni SPSS uygulamaları ve yorum* [Data analysis handbook for social sciences: Statistics, research design, SPSS applications and interpretation]. Pegem. <https://doi.org/10.14527/9789756802748>
- Can, P. (2016). The measurement of service quality with Servqual Scale: A research on Uşak University Central Library. *Karabük Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 6(1), 64, 66.
- Coates, H. (2006). *Student engagement in campus based and online education university connections*. Routledge. <https://doi.org/10.4324/9780203969465>
- Devebakan, N. , Egeli, H. A. & Koçak, N. (2019). Evaluation of service quality based on student expectations and perceptions in higher education institutions with SERVQUAL Scale: A research in Dokuz Eylül University Izmir Vocational School, *Yükseköğretim Dergisi*, 9(2) , 201-212 . <https://doi.org/10.2399/yod.18.047>
- Duru, E. (2015). The Psychometric Properties of the General Belongingness Scale: A Study of Reliability and Validity. *Turkish Psychological Counseling and Guidance Journal*, 5(44), 37-47.
- Erdoğan, A. (2020). *The effect of service quality and student satisfaction on loyalty and recommendation intention in universities: Example of sports science faculties*. (Doctoral thesis). Gazi University, Türkiye.
- Erdoğan, A. & Sural, V. (2021). Examination of the relationship between organizational attractiveness, organizational image and organizational commitments of physical education and sports teachers. *International Journal of Education Technology and Scientific Researches*, 6(16), 1646-1678. <https://doi.org/10.35826/ijetsar.408>
- Furlong M.J. & Christenson S.L., (2008). Engaging students at school and with learning: A relevant constructs for all students. *Psychology in the Schools*, 45(5), 365-368. <https://doi.org/10.1002/pits.20302>
- Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. <https://doi.org/10.3102/00346543074001059>
- Henrie, C. R., Halverson, L. R., & Graham, C. R. (2015). Measuring student engagement in technology-mediated learning: A review. *Computers & Education*, 90, 36–53. <https://doi.org/10.1016/j.compedu.2015.09.005>

- Kaban, İ., (2022). *Examination of service quality perceptions of students taking sports education in universities.* (Master's thesis). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>.
- Karakaya, A., Kılıç, İ., & Uçar, M. (2016). A survey on university students' perceptions on teaching quality. *Sosyal Bilimler Enstitüsü Dergisi*, (2), 40-55
- Kızılkaya, H. (2021). *The relationship of university students' social origins with their academic engagement.* (Doctoral Thesis). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>.
- Kızılkaya H. & Doğan İ., (2022). Development of Academic Engagement Scale for University Students: A Validity and Reliability Study. *Journal of Higher Education and Science*, 12(1), 60-68. <https://doi.org/10.5961/higheredusci.954289>
- Kutlu-Gündoğdu, F., & Asan, U. (2019). Measuring the impact of university service quality on academic motivation and university engagement of students. In F. Calisir, E. Cevikcan, & H. Camgöz-Akdag (Eds.), *Industrial engineering in the big data era. Lecture notes in management and industrial engineering.* Springer. https://doi.org/10.1007/978-3-030-03317-0_27
- İlhan, A., Oğuz, E., & Yapar, B. (2013). Okul yaşam kalitesine ilişkin algı ile akademik motivasyon düzeyi arasındaki ilişkinin incelenmesi. [Examining the relationship between perception of school quality of life and academic motivation level]. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 13(2), 157-176.
- Orman, M. (2019). *The relationship between students' perceptions of organizational image of knowledge houses and the sense of organizational loyalty.* (Master's thesis). Retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp>
- Ozankaya, Ö. (1984). *Toplum Bilimine Giriş.* [Introduction to sociology]. Ankara: S.
- Pike, G. & Kuh, G. D. (2005). First and second generation college students: A comparison of their engagement and intellectual development. *The Journal of Higher Education*, 76(3), 276-300. Retrieved from: <https://www.jstor.org/stable/3838799>
- Santos, J. (2003) E-service quality: A model of virtual service quality dimensions. *Managing Service Quality*, 13, 233-246. <http://dx.doi.org/10.1108/09604520310476490>
- Sarwar, M. & Ashrafi, G. M. (2014). Students' commitment, engagement and locus of control as predictor of academic achievement at higher education level. *Current Issues in Education*, 17(3), 1-10. Retrieved from <https://cie.asu.edu/ojs/index.php/cieatasu/article/view/1314>
- Saydan, R. (2008). Quality expectation of the university students from university teachers: case of Yüzüncü Yıl University Faculty of Economics and Administrative Sciences. *Gazi University Journal of Faculty of Economics and Administrative Sciences*, 10(1), 63-79.
- Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection, conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement*, 69(3), 493-525. Retrieved from <https://doi.org/10.1177/0013164408323233>
- Stodnick, M., & Rogers, P. (2008). Using SERVQUAL to measure the quality of the classroom experience. *Decision Sciences Journal of Innovative Education*, 6(1), 115-133. <https://doi.org/10.1111/j.1540-4609.2007.00162.x>
- Şirin, E. F., Erdoğan, M., & Çınar, M. (2019). *Üniversite hizmet kalitesi üniversiteye duyulan memnuniyet tavsiye etme niyeti ve öğrenci sadakati arasındaki ilişkilerin incelenmesi: Spor Bilimleri Fakültesi örneği.* [Examining the relationships between university service quality, satisfaction with the university, recommendation intention and student loyalty: The case of Faculty of Sport Sciences]. 2. Uluslararası Herkes için Spor ve Wellness Kongresi, Tam Metin Kitabı, 352-361.

- Tabachnick, B. G. & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston: Pearson.
- Topsakal, Y. & İplik, F. N. (2013). A research on determining the relationship between quality perceptions of university students with the level of satisfaction and recommendation. *Cag University Journal of Social Sciences*, 10(2), 82-94
- Yavaşer, G. & Yurtsızoğlu, Z. (2022). The research of athletes' perceptions and expectations regarding sports services (Iğdır Province example). *Journal of Sports and Performance Researches*, 13(2), 133-148. <https://doi.org/10.17155/omuspd.1131376>
- Yavuz, M. & Gülmez, D. (2016). The assessment of service quality perception in higher education. *Education and Science*, (41), 251-265. <https://doi.org/10.15390/EB.2016.6187>
- Yokuş, G., Ayçiçek, B. & Yanpar-Yelken, T. (2017). an investigation about the perceptions of undergraduate students related to higher education service quality and their sense of institutional belongingness: Education faculty sample. *Karaelmas Journal of Educational Sciences*, 5(1), 1-18. Retrieved from <https://dergipark.org.tr/en/pub/kebd/issue/67220/1049096>

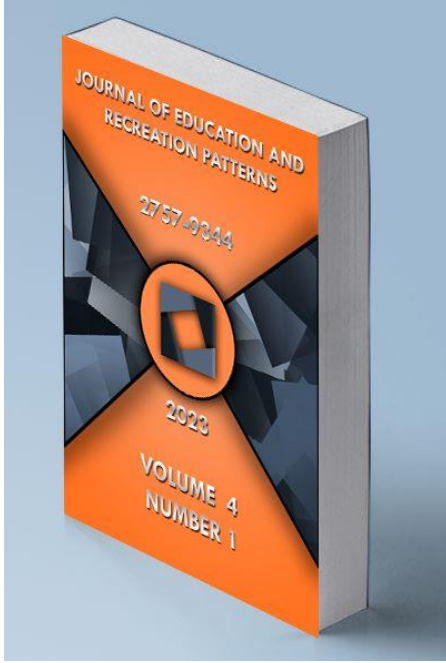
Copyright: © 2023 (Sural, V., Erdoğan, A., Çar, B. & Şirin, E. F.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None



Journal of Education and Recreation Patterns (JERP)

www.jerpatterns.com

Examining the Levels of Social Skills and Sports Ethics of Sports Science Students in terms of Different Variables Perspective

Mehmet KUMARTAŞLI¹, Özgür GÜLEN², Enes MADAK³

To cite this article:

Kumartaşlı, M., Gülen, Ö. & Madak, E. (2023). Examining the Levels of Social Skills and Sports Ethics of Sports Science Students in terms of Different Variables Perspective. *Journal of Education and Recreation Patterns (JERP)*, 4 (1), 248-262. DOI: <https://doi.org/10.53016/jerp.v4i1.115>

Journal of Education and Recreation Patterns (JERP) is an international scientific, high quality open access, peer viewed scholarly journal provides a comprehensive range of unique online-only journal submission services to academics, researchers, advanced doctoral students and other professionals in their field. This journal publishes original research papers, theory-based empirical papers, review papers, case studies, conference reports, book reviews, essay and relevant reports twice a year (June and December) in online versions.

¹ Mehmet Kumartaşlı, Süleyman Demirel University, Faculty of Sports Sciences, mehmetkmrtsl@hotmail.com,

<https://orcid.org/0000-0002-7828-546X>

² Özgür Gülen, Yalova Provincial Directorate of Youth and Sports, Ozgur.gulen@gsb.gov.tr,

<https://orcid.org/0000-0002-2305-3098>

³ Enes Madak, National Defence University, Naval War College, enesmadak58@gmail.com,

<https://orcid.org/0000-0002-7454-2422>

Examining the Levels of Social Skills and Sports Ethics of Sports Science Students in terms of Different Variables Perspective

Mehmet KUMARTAŞLI¹, Özgür GÜLEN², Enes MADAK³

ARTICLE INFORMATION

Original Research Paper

Received 22.03. 2023

Accepted 29.06. 2023

<https://jerpatterns.com>

June, 2023

Volume: 4, No: 1

Pages: 248-262

ABSTRACT

This study was made in order to determine the social skills and sports ethics levels of university students studying in the faculty of sports sciences in terms of different variables. 250 participants voluntarily participated in the study. The data used in our research were collected electronically using Google Forms. A Personal information form has been created for the collection of personal data. In order to determine the sports ethics levels of the participants; The scale developed by Uslu et al. (2019) was used for the research titled "Examination of the Relationship Between Anger Controls of Football Coaches and Personality Traits and Moral Attitudes in Sports Environment". Social Skills Inventory-Short Form (SBE-KF) was used to determine social skill levels (Koydemir,2006). SPSS 23 program was used in the statistical analysis of the data. The data showed a normal distribution as a result of the normality test, and the "Independent Sample T-Test" was applied in the analysis of binary variables and the "One-Way Analysis of Variance" was applied in multiple variables. Correlation analysis was performed to determine the relationship between the groups. The number of participants was compared in terms of age, gender, branch variable, income level, education level variables. As a result of our study, a significant difference was found between male and female athletes in terms of sports ethics levels ($p<0.05$). No significant results were reached in other variables.

Keywords: Social Skills, Sport Moral Level, Sport Sciences



This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

INTRODUCTION

Sports is the collective term for physical movements, whether performed individually or as a team, aimed at developing individuals' physical and mental abilities. It involves a series of physical movements executed within predetermined rules, either in competition against another individual or with the objective of achieving a specific goal (Tanrıverdi, 2012).

Essentially, sports is the effort exerted by individuals to enhance their physical strength and strive towards reaching their highest potential from a personal perspective (Yamaner 2001). However, an individual engaged in sports is not merely someone who develops and utilizes their physical capabilities. This is because sports also encompass the presence of intelligence, emotions, willpower, self-regulation systems, and a special moral concern. Therefore, athletes are not solely individuals striving for sporting achievements. They are individuals who strive not only for sporting success but also for upholding moral values and demonstrating ethical behavior alongside their pursuit of athletic excellence (Erdemli, 2002).

Ethics, generally speaking, refers to the entirety of behavior that individuals are obligated to adhere to as determined by society. From an ethical standpoint, human actions are evaluated in terms of good or bad, right or wrong, and the adoption of good behavior entails a responsibility to avoid engaging in bad behavior (Tanrıverdi, 2012).

What is the criterion of good and bad morality in sports competitions? Is everything done to win the competition good, and the behavior that leads to defeat bad? Or is the main purpose in sports to adopt the understanding of "I must win the competition no matter what"? Are the achievements or achievements to be achieved worth the athletes' disregard for moral values? Can a sport struggle that ignores all moral values in order to achieve success in a sports competition be called a sport?

In sports, the concept of ethics is expressed through the term "fair play." Fair play, as defined by the International Fair Play Committee, refers to gestures made by a team or athlete that prioritize the spirit of the game over their own victory and performance. It involves athletes adhering to the rules even in challenging circumstances, not accepting unfair advantages that disrupt equal opportunities, viewing their opponents as fellow participants with the same rights rather than enemies, and showing respect and value towards them. These principles embody the concept of fair play in sports, aiming to maintain integrity and sportsmanship (Sezen & Yıldırım, 2003).

Since the second half of the 20th century, the rapid development of communication tools has led to an increased interest in sports, turning it into a lucrative and commercial sector. As a result, advertising and propaganda have become part of the objectives of sports (Doğan, O. 2015). With the influx of capital into the sports market, the ethical aspects of athletes, managers, spectators, and the media have been negatively affected. Advertising contracts and additional payments based on records push athletes and sports professionals towards unethical practices in pursuit of success (Yoncalık & Gündoğdu, 2007).

Indeed, sports has become one of the largest industries in the modern world. With the impact of globalization, it has taken on a commercialized nature. The sports industry encompasses a wide range of branches, including sports organizations, sponsorship, professional sports, leagues, championships, fitness, and health (Arıpınar & Donuk, 2011). Exactly, sports is a significant industry that includes various legally conducted commercial activities such as box office revenues, sales of sports-related products, advertising, and promotional activities. These activities contribute to the overall economic growth and sustainability of the sports industry (Doğal, 2007).

Sports, which is an indispensable phenomenon of education, plays an important role in the development of moral decision-making attitudes of individuals throughout life (Gülcan, 2015). Sports, which is an important educational tool, is a phenomenon that should be in every part of today's society (Pehlivan, 2004). There are many personality behaviors in which sports have an impact on individuals. The most important of these personality behaviors are definitely to take responsibility, to do business in cooperation, to have discipline, to ensure the emergence of feelings of understanding and respect (İlhan, 2008). It is a phenomenon that is expected to reflect the moral values in sports together with sports activities in the lives of individuals (Durak, 2011).

While it is expected that doing sports will contribute to the physical, mental and spiritual development of individuals from a pedagogical point of view, today it turns into a platform to learn and exhibit behaviors contrary to sports ethics. Due to these practices, all attitudes and behaviors within the scope of sportsmanship have lost their importance, and the understanding of "winning at all cost" seen in the professional field has started to come to the forefront in school sports (Yıldıran, 2005). The ambition to win causes individuals to go outside the rules of sport. These and similar situations lead to the display of aggressive, disturbing behaviors by stepping out of the educational aspect of respect, peace and socializing that should be in sports (Tanriverdi, 2012).

The important thing in sports is to follow the established rules and act according to the rules while respecting the opponent. If the rules are not followed, it is possible to talk about turmoil and fighting, not the respect that exists in the sport. Sports should not be referred to with such moral and non-universal behaviors (Konter, 2006).

The concept of morality can be defined as a set of rules set to regulate the relations between individuals (Güngör, 2000). The concept of sportsmanship, which we constantly come across, is more than a concept that is evaluated within sports organizations, in all areas of human life; respect for mutual rights, honesty, fairness are expressed as moral values that symbolize and require their implementation (Tel, 2014).

Social development is the entire time period in which individuals develop relationships with other people and attract attention from birth to adulthood (Aracı & Aracı, 2014).

Social skills are very effective for people to express themselves in society, to keep up with social rules and to be accepted in society (Yüksel, 2004).

The relationship between social skills and sports; It is seen that physical activities contribute to increase in performance, increase in self-esteem, gain a positive perspective, get away from stress with regular sleep, self-confidence, development in interpersonal relations and integration with society (Zorba, 2006).

Today, sports, which is an important factor in the physiological, psychological and social development of individuals, is one of the ways to be used to work harmoniously among individuals, to gain solidarity in groups and belonging to a group. Erkal (1998) argues that sports activities socialize the society by increasing communication, cooperation and job sharing among individuals.

It is seen that individuals who are engaged in any sport are more skillful in establishing social relations, more resistant and perseverant against obstacles and difficulties, and do not have problems with social adaptation. Sports, regardless of whether it is recreational or professional, is an important tool that develops and completes the deficiencies of people in different aspects, ensures their correct orientation and contributes to the development of their social skills (Tiryaki, 2000).

Based on this information, the aim of the study is to assess the sports ethics and social skills of students in sports sciences faculties who are studying in different regions of Turkey. The study focuses on the evolving technology and communication tools in sports, where competition and financial gains are prioritized, aiming to become champions and win at any cost, with the main objective being to obtain advertising revenues and financial gains. The goal is to determine the level of sports ethics and social skills among sports science faculty students in relation to certain variables. The study aims to ensure the sustainability of sports ethics and social skill development aligned with the true purposes of sports, which include bringing people together, providing entertainment, creating enjoyable experiences, and upholding sportsmanship among competitors. The ultimate goal is to transfer these values to future generations without deviating from the core principles of sports, while shedding light on future research and endeavors in this field.

METHOD

Research Model

This study was conducted using the survey model, which is one of the quantitative research methods, with the aim of determining the sports ethics and social skill levels of university students studying in the Faculty of Sports Sciences in terms of certain variables. Survey research is known as studies in which participants' opinions are determined and their characteristics are identified regarding the subject under investigation. The main objective is to provide a direct explanation about the current situation and to make a description (Aslan, 2018). Additionally, since the aim of the study is to examine the relationship between students' sports ethics and social skill levels, the correlational survey model, which is one of the quantitative research methods, was applied (Arslan, 2018).

Before starting our study, an application was made to the Health Sciences Ethics Committee of Süleyman Demirel University, and the Ethics Committee report was received with the Decision Number 64-11.

Population and Sample

Our study consists of 650 students studying in the Physical Education Teaching, Sports Sciences, and Coaching Education Departments of the Faculty of Sports Sciences. It was calculated that the number of individuals to be reached within a 90 percent confidence interval is 250, but after the study, we reached 300 individuals. However, upon preliminary data analysis, it was observed that 50 individuals had made material errors and were therefore excluded from the study.

Table 1. Frequency and Percentage Values of Students' Socio-Demographic Variables

Variable	f	%
Gender	Male	150
	Female	100
Age	18-20 years old	126
	21-23 years old	81
	24 years and older	43
Branch	Team	144
	Individual	106

	0-1449 ₺	119	47.6
	1500-2999 ₺	40	16.0
Income Level	3000-4499 ₺	32	12,8
	4500-5999 ₺	19	7.6
	6000 ₺ and above	40	16.0
Education	Lisans	235	94.0
	Master degree	15	6.0
Do you do sport?	Yes	212	84.8
	No	38	15.2
Do you have an athlete license?	Yes	154	61,6
	No	96	38,4
Total		250	100

According to Table 1, it can be observed that out of the participants, 60 were male (n=150), accounting for 40% of the total, while 100 were female, representing 60% of the total. In terms of age distribution, 50.4% of the participants were in the 18-20 age range (n=126), 32.4% were in the 21-23 age range (n=81), and 17.2% were 24 years old and above (n=43). Furthermore, 57.6% of the participants were involved in team sports (n=144), while 42.4% were engaged in individual sports. Regarding income levels, 47.6% of the participants had an income ranging from 0 to 1449 ₺ (n=119), 16% had an income between 1500 and 2999 ₺ (n=40), 12.8% had an income between 3000 and 4499 ₺ (n=32), 7.6% had an income between 4500 and 5999 ₺ (n=19), and 16% had an income of 6000 ₺ and above (n=40). In terms of education, 94% of the participants were at the undergraduate level (n=235), while 6% were at the postgraduate level (n=15). It was found that 84.8% of the participants were engaged in sports (n=212), while 15.2% did not participate in any sports activities (n=38). Additionally, 61.6% of the participants had a sports license (n=154), while 38.4% did not possess a sports license (n=96).

Data Collection Tools

The data collection tools used within the scope of the research were shared by the researcher with university students studying at the faculty of sports sciences between 12/09/2022- 09/05/2023 via Google forms. Data were collected from the athletes participating in the study with the Personal Information Form regarding gender, age branch, income level, education level, sports activity status and whether they are licensed. In the study, the scale developed by Uslu et al., (2019) for the study "Examination of the Relationships between Anger Controls of Football Coaches and Personality Traits and Moral Attitudes in Sports Environment" was used to determine the sports ethics levels of individuals.

Personal Information Form

A personal information form was created to gather information about the participants' demographic characteristics. This form includes questions about gender, age, educational status, income level, sports branch, participation in sports, and whether they have a athlete license.

Social Skills Inventory- Short Form (SBE-KF)

The scale, developed by Riggio in 1986 and later revised in 1989, took its current form and was adapted into Turkish through the study conducted by Yüksel (1997). This inventory consists of 90 items that are designed to assess the foundation of social skills and enable individuals to self-reflect (Yüksel, 1997).

Social Skills Inventory- Short Form (SBE-KF) was used to determine the social skill levels of individuals (Koydemir, 2006). SBE-KF is a 5-point Likert type scale; The highest possible score is 150 and the lowest score is 30. The Cronbach's alpha coefficient obtained for the total scale was determined as 0.85.

Sports Moral Level

In the study, the scale developed by Uslu et al., (2019) for the study "Examination of the Relationships between Anger Controls of Football Coaches and Personality Traits and Moral Attitudes in Sports Environment" was used to determine the sports ethics levels of individuals.

Table 2. Reliability (Alpha) Coefficients Related to the Scales

	n	\bar{X}	Items	Cronbach Alpha (α)
Sports Moral Level	250	43.83	17	.837
Social Skills	250	102.74	30	.660

In Table 2, the reliability tests of the Social Skills Inventory-Short Form (SBE-KF) and Sports Moral Level are presented. The internal consistency coefficient of the Social Skills Inventory-Short Form is determined to be $\alpha=0.837$, while the internal consistency coefficient of the Sports Moral Level scale is $\alpha=0.660$.

Analysis of Data

The study reached out to 300 students, and it was determined that 50 students had made erroneous markings. Excluding these 50 data , analyses were conducted with 250 data using the SPSS 23.0 software package. It was determined that the data showed normal distribution as a result of the Kolmogorov-Smirnov Test. Independent Samples T-Test was applied in the bilateral comparison between the groups and One-Way Anova test was applied in multiple comparisons and Bonferroni from Post Hoc tests was used to determine the difference between the groups. Correlation analysis was applied to determine whether there was a relationship between the social skill level of the participants and their sport morality levels. The results of the analysis were evaluated at a significance level of 0.05.

Table 3.Normality Table

	Kolmogorov-Smirnov ^a			Skewness	Kurtosis
	Statistic	df	Sig.		
Sports Moral Level	.054	250	.073	.490	1.135
Social Skills	.056	250	.055	-.201	-.236

When Table 3 is examined, the results of the skewness and kurtosis tests conducted to determine the distribution of the data, it has been determined that the data follows a normal distribution. Tabachnick and Fidell (2013) stated that skewness and kurtosis coefficients within the range of +1.5 and -1.5 are considered to be in accordance with the parameters of a normal distribution.

FINDINGS

This section includes analyses related to the variables of gender, sports branch, athlete license, income level, and age in line with our study (Table 4, Table 5, Table 6, Table 7, Table 8, Table 9, Table 10, Table 11).

Table 4. Independent Sample T-Test Tmaleable by Gender Variable of Participants

Scale	Sex	n	\bar{X}	SD	t	df	p
Sports Moral Level	Male	150	45.47	10.15	3.189	248	.002*
	Female	100	41.36	9.74			
Social Skills	Male	150	103.12	9.84	.772	248	.441
	Female	100	102.16	9.29			

*P<0.05

When Table 4 is examined, the results of the Independent Sample T-Test indicate that there is a statistically significant difference in sports morality levels between male and female participants. Male participants tend to have higher levels of sports morality compared to female participants in the sample $p < 0.05$.

Table 5. Independent Sample T-Test Table According to the Athlete License Variable of the Participants

Scale	Athlete Licence	n	\bar{X}	SD	t	df	p
Sports Moral Level	Yes	154	43.31	10.43	-1.004	248	.317
	No	96	44.65	9.75			
Social Skills	Yes	154	103.38	9.63	1.363	248	.174
	No	96	101.68	9.05			

When Table 5 is examined the results of the Independent Sample T-Tests suggest that there are no significant differences in sports moral level or social skills level between participants with and without an athlete license $p > 0.05$.

Table 6. Independent Sample T-Test Table According to the Branch Variable of the Participants

Scale	Sports Branch	n	\bar{X}	SD	t	df	p
Sports Moral Level	Team	144	44.18	10.09	1.638	248	.524
	Individual	106	43.34	10.32			
Social Skills	Team	144	103.50	9.54	1.467	248	.144
	Individual	106	101.69	9.67			

When Table 6 was examined, there was no statistically significant differences in sports moral level and social skills according to the branches of the participants $p > 0.05$.

Table 7. One-Way Anova Test Results Table by Income Level Variable of Participants

Sub-Dimensions	Income Level	n	\bar{X}	SD	f	p
Sports Moral Level	0 - 1499 ₺	119	43.87	9.71	.542	.705
	1500-2999 ₺	40	45.55	10.86		
	3000-4499 ₺	32	43.63	9.96		
	4500-5999 ₺	19	14.68	12.42		
	6000 ₺ and above	40	43.15	10.05		
Social Skills	0 - 1499 ₺	119	102.14	9.23	.349	.845
	1500-2999 ₺	40	103.75	9.11		
	3000-4499 ₺	32	102.44	9.45		
	4500-5999 ₺	19	104.21	8.94		
	6000 ₺ and above	40	103.03	11.79		

When Table 7 is examined, there is no statistically significant differences in sports moral level and social skills according to income level $p>0.05$.

Table 8. One-Way Anova Test Results Table by Age Variable of Participants

Sub-Dimensions	Age	n	\bar{X}	SD	f	p
Sports Moral Level	18-20 years old	126	43.38	8.37	.810	.446
	21-23 years old	81	44.98	12.54		
	24 years and older	43	42.93	10.06		
Social Skills	18-20 years old	126	102.21	9.68	.477	.621
	21-23 years old	81	103.55	10.20		
	24 years and older	43	102.72	8.30		

When Table 8 was examined, there was no statistically significant differences in sports moral level deterioration and social skills according to age status $p>0.05$.

Table 9. Relationship Table Between Social Skills and Moral Distance Levels of Participants According to Gender Status

Variable	Scale		Sports Moral Level	Social Skills
Sex	Sports Moral Level	r	1	1
		p		
	Social Skills	r	-.054	
		p	.392	

When Table 9 was examined, no relationship was seen between the morality and social skill level of the participants according to gender status ($r=-.054$ $p=.392$, $p>0,05$).

Table 10. Relationship Table Between Social Skills and Moral Distance Levels of Participants According to Their Branch Status

Variable	Scale		Sports Moral Level	Social Skills
Branch	Sports Moral Level	r	1	1
		p		
	Social Skills	r	-.048	
		p	.455	

When Table 10 was examined, no relationship was seen between the participants' distance from morality and social skill level according to their branch status ($r=-.048$ $p=.455$, $p>0,05$).

Table 11. Relationship Table Between Social Skills and Moral Distance Levels of Participants According to Their Licence Status

Variable	Scale		Sports Moral Level	Social Skills
Athlete Licence	Sports Moral Level	r	1	1
		p		
	Social Skills	r	-.038	
		p	.548	

When Table 11 was examined, no relationship was seen between the de-morality and social skill level of the participants according to the athlete license status ($r=-.038$ $p=.548$, $p>0.05$).

DISCUSSION

This study was conducted to examine the social skills and sports ethics of university students studying at the Faculty of Sports Sciences in terms of some variables. According to the results of the analysis of the study, it was determined that there was a significant difference in the gender variable, while when the other variables were examined, no significant difference was detected. Whether the participants were doing individual or team sports did not show a significant difference in determining their moral and social skill levels. In the absence of a significant difference according to the income level of the participants, it is thought that sports are due to the ability to gather individuals in the same social environment without separating them according to income level.

According to the gender variable, statistical significance was found at the level of alienation from morality ($p < 0.05$), while no statistical significance was found at the level of social skills ($p > 0.05$). In the study conducted by Sagın and Akbuğa (2019), when the average of the students according to the gender variable was examined, it was seen that the values of the social-emotional and moral levels of both male and female students were close to each other, but there was no significant difference between the groups in the gender variable. In the studies conducted by Stephens (2009) and Kayışoğlu et al. (2015), no significant difference was found.

According to the athlete license of the participants, there was no statistically significant difference in the level of moral distance and social skills ($p > 0.05$). In another study that supports our study, no difference was found between the groups in the levels of social skills, aggression attitudes and distancing from morality according to the variables of sports licensed and recreational sports ($p > 0.05$) (Seker and Tuna, 2020). In a similar study, when the social-emotional and moral developments of the students in the school teams were examined in terms of the grade level variable, no significant difference was found between the grade levels in all sub-dimensions of the scale (Sagın & Akbuğa, 2019). When we look at other studies in the literature, it has been seen that there is a positive increase in moral decision-making attitudes as the age progresses in athletes (Altın and Özseri, 2017).

According to the branches of the participants, there was no statistical significance in the level of moral distance and social skills ($p > 0.05$). In another study, contrary to our study, when the social integration and moral maturity levels of the athlete students were examined according to the variable of individual sports branches, it was concluded that there was a positive difference in the taekwondo branch compared to other individual branches ($p < 0.05$) (Evli, 2018). In a similar study, the social-emotional and moral development of the students who took part in the school sports teams was found to be at a higher level in the sub-dimensions of honesty, self development, positive social behavior, and respect at home compared to the students who did not take part ($p < 0.05$) (Sagın and Akbuğa, 2019). Akandere (2009) stated in his study that the moral judgment levels of students who do sports are higher compared to students who do not.

In our study, there was no statistically significant difference in the level of moral deterioration and social skills according to income level $p > 0.05$. In the doctoral thesis conducted by Evli (2018), it was determined that the difference in the moral maturity levels of the participants according to the income status group was statistically significant at the 95% confidence level. Similarly, in another study, Seydoğulları (2008) concluded that there was no significant relationship between the moral judgment levels of high school students and their economic status. Unlike these data, Gümüş (2015) concluded in his research that moral maturity increases in students whose income level decreases. It is seen that different results are obtained in different studies between the level of moral maturity and the income status variable. This situation can be assessed as participants with a low or medium income status, both they and their families are more attached to traditional and moral values.

In our study, there was no statistically significant difference in the level of demorality and social skills according to age status $p>0.05$. A similar study was seen in Evli's study (2018). It was determined that the social integration and moral maturity levels of the participants were not statistically different according to the age group.

According to the gender status of the participants, there was no relationship between the level of moral disengagement and social skills ($r=-.054$ $p=.392$, $p>0.05$). In a similar study, when the average of the students according to the gender variable is examined, it is seen that the values of the social-emotional and moral levels of both male and female students are close to each other. There was no significant difference between the groups in the gender variable (Sağın and Akbuğa, 2019). In some studies, it is seen that the moral decision-making attitudes of female students are higher than male students (Gürpınar, 2014; Sengun, 2007; Koul, 2012). According to the gender status of the participants, the moral decision-making attitudes of female athletes are good (Gürpınar, 2014b; Özbek & Nalbant, 2016), the moral decision-making attitudes of male athletes are good (Atalay, 2016; Büyükelhan et al., 2019; Çağlayan, 2017; Doğru, 2019). There we moral disengagement re also study findings that did not differ (Arslan, 2018). Based on the results of the literature, no consensus could be reached in the dimension of moral decision making according to the gender variable. It can be argued that within society, female anger and aggressive behaviors are suppressed, while male anger and aggressive behaviors are either accepted or supported by society.

In our study, there was no relationship between the sports morality and social skill level of the participants according to their branch status ($r=-.048$ $p=.455$, $p>0.05$). While Evli (2018) determined that the difference in the moral maturity levels of the participants according to the team sports branch group was not statistical, it was determined that the difference in the moral maturity levels of the participants according to the individual sports branch group was statistically significant. It was determined that the moral maturity levels of the participants whose branch status was Taekwondo were higher than the other branch groups. According to the study conducted (Türksoy Işım et al. 2019), moral disengagement levels among amateur league football players are moderate. Similarly, in general team sports, (Altun et al. 2018; Sarı and Deryahanoğlu. 2019) found that moral disengagement levels are at a moderate level. Individuals engaged in team sports, in general, are more negatively affected in terms of moral decision-making and moral disengagement in sports. Furthermore, the scores of individuals involved in individual sports were found to be at a better level compared to those engaged in team sports, depending on the nature of the sports discipline (Altun et al., 2018; Sarı & Deryahanoğlu, 2019).

In our study, there was no relationship between the sports morality and social skill level of the participants according to their undergraduate status ($r=-.038$ $p=.548$, $p>0.05$). In a similar study, no difference was found between the groups in the levels of social skills, aggression, and moral distancing according to the sports license and recreational sports variables (Şeker & Uslu, 2020). In another study that supported our study, it was determined that moral maturity levels were not significant according to the variable of being a licensed sportsman in the family (Evli, 2018). According to the study conducted (Kanalgil et al. 2021), individuals who have been engaged in sports for less than 3 years or less than 6 years have more positive moral decision-making attitudes. No significant difference was found between moral disengagement and the duration of engagement in sports. On the other hand, (Büyükelhan et al.2019) concluded in their study that individuals engaged in sports for more than 7 years had better attitudes. In the study (Güvendi et al. 2019), it was found that as the years of engaging in sports increased, moral decision-making attitudes improved.,

As a result, considering the scores of the participants for both scales in our study, it can be said that their sports moral level ($\bar{X}=43.83$) is low and their social skill levels ($\bar{X}=102.74$) are above average.

Conclusion

As a result in this study, it was evident that gender significantly influenced sports morality levels, with male participants demonstrating higher levels compared to their female counterparts. However, social skills levels remained consistent across various factors, indicating that factors beyond those examined in this study may play a more prominent role in shaping social skills within the context of sports.

Recommendations

Overall, future researchers should aim to explore additional factors, employ comprehensive measurement tools, and replicate the study in diverse sports settings to further our understanding of the relationship between social skills and sports morality. These suggestions will help advance the field and contribute to the development of effective strategies for promoting positive social behaviors within the context of sports. Based on the research findings, it can be suggested to provide support for team athletes in terms of moral decision-making. Further investigation can be conducted over longer time periods in various team and individual sports disciplines.

REFERENCES

- Akandere, M., Baştuğ, G., Güler, E.D. (2009). Orta öğretim kurumlarında spora katılımın çocuğun ahlaki gelişimine etkisi. *Niğde Üniversitesi Beden Eğitimi ve Spor Bilimleri Dergisi*, 3 (1), 59-68.
- Akoğlu, H. E., Ayyıldız, E., & Sunay, H. (2019). Uluslararası spor organizasyonlarına katılan sporcuların sporda ahlaktan uzaklaşma ve sportmenlik davranışlarının incelenmesi. *II. Dünya Spor Bilimleri Araştırmaları Kongresi*, 21-24, Manisa, Türkiye.
- Altın, M. ve Özsarı, A. (2017). Sporcu eğitim merkezlerinde yatılı olarak eğitim gören sporcuların ahlaki karar alma tutumları. *Uluslararası Kültürel ve Sosyal Araştırmalar Dergisi (UKSAD)*, 3(1), 133-145.
- Altun, M., Tunçel, M., & Güvendi, B. (2018). Spor bilimleri fakültesinde okuyan öğrencilerin ahlaktan uzaklaşma düzeyleri. 2. *Uluslararası Multidisiplinler Çalışmaları Kongresi*, 20-28, Adana, Türkiye. *Akademik Sosyal Araştırmalar Dergisi*, 4(31), 53-66. <https://doi.org/10.16992/ASOS.1331>
- Aracı, H. ve Aracı Ş. (2014). *Spor Bilimleri Öğretimi*. Eylül Ofset. 1. Basım Grafiker Rek. San. ve Tic. Ltd Şti. Ankara.
- Arıpınar, E., Donuk, B. *Fairplay spor yönetim ve organizasyonlarında etik yaklaşımlar*. (2011). İstanbul: Ötüken Yayıncılık, 170.
- Aslan, Ş. *Sosyal bilimlerde araştırma yöntemleri: nicel, nitel ve karma tasarımlar için bir rehber* (2018). İstanbul: Eğitim Yayınevi, 108.
- Atalay, A. (2016). Türkiye’de üniversitelerde eğitim gören öğrenci-sporcuların ahlaki karar alma tutumları. *Akademik Sosyal Araştırmalar Dergisi*, 4(31),53-66. <https://doi.org/10.16992/ASOS.1331>
- Böyükelhan, E., Özdilek, Ç., Kaya, T., & Öztürk, Y. (2019). Bazı değişkenlere göre öğrencim sporcuların ahlaki karar alma tutumlarının incelenmesi. *Spormetre Beden Eğitimi ve Spor Bilimleri Dergisi*, 17(4), 172-180. <https://doi.org/10.33689/spormetre.579557>
- Çağlayan, A. Özbar, N., Türkmen, N., & Öztürk, Y. (2017). Spor bilimleri fakültesi ve beden eğitimi ve spor yüksekokulu öğrencilerinin ahlaki karar alma tutumlarının incelenmesi. *Uluslararası Hakemli Psikiyatri ve Psikoloji Araştırmaları Dergisi*, 10, Sonbahar Kış, 20-42. <https://doi.org/10.17360/UHPPD.2017.3.8>.

- Çavdar, G. (2019). *Kadın futbolcuların sportmenlik yönelimleri ve sporda ahlaktan uzaklaşma mekanizmalarının farklı değişkenlere göre değerlendirilmesi*(Yayınlanmamış yüksek lisans tezi). Trabzon Üniversitesi.
- Doğal, B. (2007) *Spor sosyolojisi ve uygulamalı spor sosyolojisine giriş*. Ankara: Nobel Yayın Dağıtım, 85.
- Doğan, O. (2015). *Spor psikolojisi*. İstanbul: Detay yayıncılık, 2.
- Doğru, M. (2019). *Spor yapan ve yapmayan ortaokul öğrencilerinin benlik algısının ahlaki karar alma tutumlarına etkisinin incelenmesi* (Yayınlanmış yüksek lisans tezi). Balıkesir Üniversitesi.
- Durak, N. (2011). Gelenek ve modernite etkileşimi bağlamında spor etiği. *Süleyman Demirel Üniversitesi İlahiyat Fakültesi Dergisi*, 2(27), 43-63.
- Erdemli, A. (2002). *Temel sorunlarıyla spor felsefesi*, İstanbul: Eyayınları, 57-58.
- Erkal, M., Güven, Ö., ve Ayan, D. (1998). *Sosyolojik Açıdan Spor*. Genişletilmiş 3. Baskı. İstanbul: Der Yayınları.
- Evli F. (2018). *Üniversite takımlarında farklı branşlardaki sporcuların ahlaki olgunluk ve sosyal bütünleşme düzeyleri*. Doktora Tezi, T.C. Hitit Üniversitesi, Sağlık Bilimleri Enstitüsü Beden Eğitimi ve Spor Anabilim Dalı, Çorum.
- Gülcan, N. Y. (2015). Discussing the importance of teaching ethics in education. *Procedia-Social And Behavioral Sciences*, 174, 2622-2625. <https://doi.org/10.1016/j.sbspro.2015.01.942>
- Gümüş, E. (2015). *Kohlberg'in ahlaki gelişim kuramına göre ortaokul öğrencilerinin ahlaki gelişim düzeyi ile cinsiyet rollerinin incelenmesi*. Yüksek Lisans Tezi. Atatürk Üniversitesi, Eğitim Bilimleri Enstitüsü, Erzurum.
- Güngör E (2000). *Ahlak psikolojisi ve sosyal ahlak*. İstanbul: Ötüken Yayıncılık.
- Gürpınar, B. (2014). Sporcu ortaokul ve lise öğrencilerinin spora ait değişkenler açısından ahlaki karar alma tutumları. *Eğitim ve Bilim*, 39(176). <https://doi.org/10.15390/EB.2014.3645>
- Hacıcaferoğlu, S., Selçuk, M., Hacıcaferoğlu, B., Karataş, Ö. (2015). Ortaokullarda İşlenen Beden Eğitimi Ve Spor Derslerinin, Sportmenlik Davranışlarına Katkısının Bazı Değişkenler Açısından İncelenmesi. *International Journal Of Sport Culture And Science*, 3(Special Issue 4), 557-566. DOI: 10.14486/IJSCS431
- İlhan, L. (2008). Eğitilebilir zihinsel engelli çocuklarda beden eğitimi ve sporun sosyalleşme düzeylerine etkisi. *Kastamonu Eğitim Dergisi*, 16(1), 315-324
- Kanalgil, M.Temel , A.Emre, T.İnan T. (2022). Altyapı sporcularının ahlaki karar alma ve ahlaktan uzaklaşma tutumlarının incelenmesi *Gençlik Araştırmaları Dergisi*. 1(29) . 14-23. <https://doi.org/10.52528/genclikarastirmalari.898598>
- Kayısoğlu, N.B., Altınkök, M., Temel, C., Yüksel, Y. (2015). Investigation of secondary school students' physical education sportsmanship behaviours: Karabük sample. *International Journal of Social Sciences and Education Research*, 1 (3), 1044-1056. <https://doi.org/10.24289/ijsser.279164>
- Konter E (2006). *Spor psikolojisi el kitabı*. Ankara: Nobel Yayınevi.
- Koul, R. (2012). Multiple motivational goals, values, and willingness to cheat. *International Journal of Educational Research*, (56), 1-9. <https://doi.org/10.1016/j.ijer.2012.10.002>
- Koydemir, S. (2006). *Predictors of shyness among university students: Testing a self-presentational model / Üniversite öğrencilerinde utangaçlığın yordayıcıları: Bir benlik sunumu modelinin incelenmesi*. Yüksek Lisans Tezi, Orta Doğu Teknik Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.
- Özbek, O., & Nalbant, U. (2016). Kuzey Kıbrıs Türk Cumhuriyeti'ndeki genç sporcuların ahlaki karar alma tutumları. *14. Uluslararası Spor Bilimleri Kongresi*. Antalya, Türkiye.

- Pehlivan, Z., Konukman, F. (2004). Fair-Play kavraminin geliştirilmesinde okul sporunun yeri ve önemi. *Spormetre Beden Eğitimi Ve Spor Bilimleri Dergisi*, 2(2), 49-53. https://doi.org/10.1501/Sporm_00000000028
- Riggio, R.E. (1986). The assessment of basic social skills. *Journal of Personality and Social Psychology*. 51,649-660. <https://doi.org/10.1037/0022-3514.51.3.649>
- Riggio, R.E. (1989). *Social skills inventory manual. (Research Edition)*. USA, Palo Alto, CA: Consulting psychologists press.
- Sağın A.E. ve Akbuğa T. (2019). Lisanslı Spor Yapan Öğrencilerle Spor Yapmayan Ortaokul Öğrencilerinin Bazı Değişkenler Açısından Sosyal-Duygusal ve Ahlaki Gelişim Düzeyleri. *Journal of Global Sport and Education Research*, Volume 2, Issue 1, 35 – 44.
- Sarı, İ., & Deryahanoğlu, G. (2019). Sporcularda ahlaktan uzaklaşmanın güdüsel iklim ve sporcuların önem verdikleri özellikler ile ilişkisi. *Spormetre Beden Eğitimi ve Spor Bilimleri Dergisi*, 17(4), 91-104. <https://doi.org/10.33689/spormetre.536451>
- Seydooğulları, Ü. S. (2008). *Demokratik ve otoriter ana baba tutumlarının lisede öğrenim gören öğrencilerin ahlaki yargı yeteneğine etkisi*. Yüksek Lisans Tezi, Sakarya Üniversitesi Sosyal Bilimler Enstitüsü, Sakarya.
- Sezen, G. ve Yıldırım, İ. (2003). *Profesyonel ve amatör futbolcuların fair play anlayışları*. Beden Eğitimi ve Sporda Sosyal Alanlar Kongresi, Ankara: Sim Matbaacılık, 13.
- Stephens, D.G. (2009). *A correlation study on parental attachment and moral judgment competence of millennial generation college students*. (Unpublished doctoral dissertation), The Graduate College at the University of Nebraska, Lincoln, Nebraska.
- Şeker İ. ve Uslu T. (2020) Spor yapan ve spor yapmayan üniversite öğrencilerinin sosyal beceri, saldırganlık ve spor ahlaki düzeylerinin incelenmesi, Harran Üniversitesi Örneği. *Spor Eğitimi Dergisi*, 4(2), 172-189.
- Şengün, M. (2007). Ahlaki gelişimin psiko-sosyal dinamikleri. *Ondokuz Mayıs Üniversitesi İlahiyat Fakültesi Dergisi*, 23(23), 201-221.
- Tabachnick, B.G., Fidell, L.S. (2013). *Using multivariate statistics*. Boston, Pearson.
- Tanrıverdi H (2012). Spor ahlakı ve şiddet. *The Journal Of Academic Social Science Studies*, 5(8): 1071–1093. https://doi.org/10.9761/jasss_361
- Tel, M. (2014). Türk toplum yaşantısında fair play. *International Journal Of Science Culture And Sport*, 1, 694-704. <https://doi.org/10.14486/IJSCS139>
- Tiryaki, Ş. (2000). *Spor psikolojisi*. Ankara: Eylül Kitap ve Yayınevi.
- Türksoy Işım, A. T., Güvendi, B., & Toros, T. (2019). Amatör lig futbolcularında sporda ahlaktan uzaklaşma, güdüsel iklim ve karar verme. *International Journal of Social Sciences and Education Research*, 5(1), 54-62. <https://doi.org/10.24289/ijsser.483295>
- Uslu, T. ve Esen, S., Kaygusuz, Ş. ve Or, E. (2019). *Futbol antrenörlerinin öfke kontrolleri ile kişilik özellikleri ve spor ortamındaki ahlaki tutumları arasındaki ilişkilerin incelenmesi*, 17th International Sport Sciences Congress Book of Abstracts, Spor Bilimleri Derneği, 13-16 November 2019, Lara-Antalya, SB854, 716.
- Yamaner, F. (2001) *Beden eğitimi ve spor'da temel ilkeler*, Bursa: Ekin Kitabevi, 6.
- Yıldırım, İ. (2005). Fair play eğitiminde beden eğitiminin rolü. *Gazi Beden Eğitimi ve Spor Bilimleri Dergisi*, 10(1), 3-16.
- Yoncalık, O., Gündoğdu, C. (2007). Sporda ahlaki bir sorun olarak doping. *Fırat Üniversitesi Doğu Araştırmaları Dergisi*. 6(1), 128-134.
- Yüksel, G. (1997). *Sosyal beceri eğitiminin üniversite öğrencilerinin sosyal beceri düzeyine etkisi (Yayımlanmamış doktora tezi)*. Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.
- Yüksel, G. (2004). *Sosyal beceri envanteri el kitabı*. 1. Basım, Ankara: Asil Yayın Dağıtım.
- Zorba, E. (2006). *Herkes için yaşam boyu spor*. Ankara: Nobel yayıncılık.

Copyright: © 2023 (Kumartaşlı, M., Gülen, Ö. & Madak, E.). This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None