

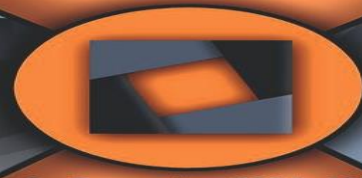
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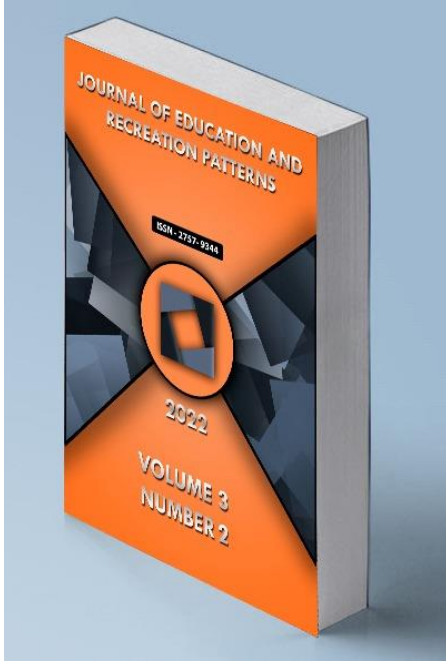
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The Effect of Servant Leadership Behaviors of School Principals on Teachers' Job Satisfaction*

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The Effect of Servant Leadership Behaviors of School Principals on Teachers' Job Satisfaction

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ABSTRACT

In this study, the effect of servant leadership behaviors of school principals on teachers' job satisfaction was examined according to teacher opinions. A total of 434 teachers working in public schools in 12 provinces in different regions of Turkey participated in the research. In this study, casual-comparative and correlational survey models were used. Data were collected by using the "Servant Leadership Scale" and "Job Satisfaction Scale". Descriptive and probative statistical techniques were used to analyze the data. As a result, it was determined that school principals' servant leadership behaviors and teachers' job satisfaction were high. It was also determined that the job satisfaction of teachers with a seniority of 21 years and above was higher than that of teachers with a seniority of 11-15 years. It was revealed that male teachers' servant leadership perceptions were higher than female teachers. In addition, the results showed that there was a positive and moderate relationship between servant leadership and job satisfaction. The study also concluded that servant leadership was a significant predictor of teacher job satisfaction. Suggestions were made for practitioners and other researchers considering the results and limitations of the research.

Keywords: Servant Leadership, Job Satisfaction, School Principal, Teacher, Regression Analysis



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INTRODUCTION

Leadership is critical to understanding the success of an organization. Leadership is expressed with the skills that the administrators use to influence followers in organization in line with the specifically defined goals for the common good (Cyert, 2006; Plsek & Wilson, 2001). Great leaders create a shared organizational vision, clarify this vision to their stakeholders, develop a way to achieve the vision and guide their organizations in this direction (Banutu-Gomez & Banutu-Gomez, 2007). In this context, it may be said that there has been a change in the theories of leadership styles. Trivers (2009) emphasizes that the theories of leadership styles have evolved from traditional, autocratic, and hierarchical leadership styles to altruistic and supportive leadership styles over time. One of these altruistic and supportive leadership styles is servant leadership, which has become popular in recent years. Servant leadership is an important leadership model that reflects contemporary and post-industrial perspectives on leadership (Northouse, 2019).

Servant leadership is known to be positively correlated with many desirable employee outcomes. At the organizational level, servant leadership increases team effectiveness (Hu & Liden, 2011; Irving & Longbotham, 2007) and organizational performance (Liden et al., 2014). Servant leadership creates an organizational culture among employees in the organization, where employees help and serve each other (Liden et al., 2014). Servant leadership has a positive and significant relationship with employees' internal job satisfaction (Cerit, 2009) and overall job satisfaction (Mayer et al., 2008).

Servant leadership is a useful leadership approach for educational organizations of which main function is to improve the qualities of people (Taylor et al., 2007). In this context, it is seen that studies on servant leadership in education primarily focus on the servant leadership characteristics of K-12 school principals. Hereupon, the studies on the relationship between personal and school-related factors of behavior and attitude of leaders with servant leadership characteristics (Girard, 2000; Jennings, 2002; Thompson, 2005), student success (Lambert, 2004), school performance (Herbst, 2003), and teachers' job satisfaction levels (Anderson, 2005; Cerit, 2009) draw attention. Although this leadership approach has been widely adopted and applied in organizations today, it may be said that the number of theoretical and empirical studies in this field, especially within the scope of educational organizations, is quite limited in the literature. For this reason, this study, which was conducted to determine the effect of servant leadership behaviors of school principals on teachers' job satisfaction, aims to contribute to fill this gap in the literature. For this purpose, the study seeks answers to the following questions:

1. What is the level of school principals' servant leadership behaviors perceived by teachers and teachers' perceptions of job satisfaction?
2. Do school principals' servant leadership behaviors perceived by teachers and teachers' job satisfaction show a significant difference according to teachers' gender and professional seniority?
3. Is there a relationship between school principals' servant leadership behaviors perceived by teachers and teachers' job satisfaction?
4. Do school principals' servant leadership behaviors perceived by teachers predict teachers' job satisfaction?

THEORETICAL FRAMEWORK

Servant Leadership

The concept of servant leadership, which has become increasingly popular in recent years, has not yet been systematically defined in the literature (Eva et al., 2019; Northouse, 2019). The current literature on servant leadership is based on the work of Greenleaf, who in 1964 founded the now named The Robert K. Greenleaf Center for Servant Leadership (Daubert, 2007). This non-profit center selects best practices in servant leadership and aims to raise awareness about these practices in both individuals and organizations (Greenleaf Center for Servant Leadership, 2014). According to Greenleaf (1970), servanthood precedes leadership. The individuals' desire to serve begins with their natural feeling. For the servant leaders who capture this service orientation, the needs and wishes of their stakeholders come before their own needs. The servant leaders go beyond individual egoism and needs and prioritize the personal development and empowerment of their followers (Greenleaf, 1970.)

In studies of servant leadership to date, researchers have extended Greenleaf's ideas by reflecting their own perspectives and models in their work. Spears and Wagner-Marsh (1998), for example, define the ten characteristics of servant leadership as "listening, empathy, healing, awareness, persuasion, conceptualization, foresight, serving, commitment to people's development, and the ability to build a community". Russell and Stone (2002) combine conceptualization and foresight from these features in a new feature they call vision. Sendjaya and Sarros (2002) state that servant leaders see themselves as servants who develop and empower others to reach their potential. Therefore, this model differs from other leadership models in that it focuses on moral development, service, and the promotion of the common good (Graham, 1991). Liden et al. (2008) evaluate the servant leader as someone who empowers, creates value for the community, has conceptual skills, helps others, prioritizes stakeholders, acts ethically, and helps stakeholders develop and grow. According to Johnson (2001), servant leadership is in an advantageous position over other leadership approaches with its focus on altruism, simplicity, and self-awareness. Thus, servant leadership emphasizes the reduction of complexity that results from bringing personal desires into conflict with those of stakeholders, and a moral concern for others.

Servant leadership can be conceptualized as a mindset that summarizes how the leader sees the world (Laub, 2004). In this sense, servant leadership has different aspects from other leadership types such as ethical leadership, authentic leadership, and transformational leadership. Accordingly, while servant leadership focuses on serving others, ethical leadership has a strong emphasis on moral and ethical issues (Reddy & Kamesh, 2019). While servant leaders have the tendency to put others before themselves; authentic leaders try to manage the organization by considering their own values, feelings, and beliefs (Abbas et al., 2020; Harter, 2002). Moreover, servant leaders focus on providing benefits to the members of the organization (Van Dierendonck, 2011), transformational leaders act with a vision of achieving organizational benefits (Andersen, 2018).

Job Satisfaction

Job satisfaction can be defined as "the mental state determined by the individual's perception of the extent to which his/her job-related needs should be met" (Evans, 1997, p. 328). Job satisfaction is also expressed as the pleasant feelings that employees have about their job (Akehurst et al., 2009). Similarly, Weiss (2002) argues that job satisfaction is a positive evaluation of an individual's job. Job satisfaction is extremely important in organizations because when employees are satisfied with their jobs, they show high organizational

commitment, which can result in lower turnover rates, higher productivity, and better performance (Meyer et al., 2004).

Even in effective schools that consistently perform well academically, it is important for students, teachers, and other employees to meet their physical, mental, and social needs while attending school (McAlpin & Slate, 2021), in other words, to be satisfied with their work. When evaluated within the scope of educational organizations, job satisfaction is closely aligned with the well-being of teachers, the development of students, and the interconnectedness of education systems worldwide (Toropova et al., 2021). Job satisfaction is also associated with the cooperation of school staff (Olsen & Huang, 2019), administrator support (Ansley et al., 2019; Olsen & Huang, 2019), and working conditions (Ansley et al., 2019; Sims, 2020). In general, when teachers' job satisfaction is high, their turnover rate decreases (Ladd, 2011). In other words, teachers' beliefs, attitudes, and perceptions are affected by job satisfaction (Kumedzro, 2018).

Servant Leadership and Job Satisfaction

The rate of teachers leaving their jobs or leaving their profession is higher than most other professions (Young, 2018). There are many factors that cause teachers to leave the profession or change school before they retire (Player et al., 2017). These factors can be explained by school environment, organizational characteristics, teacher characteristics (teacher competence, teacher intentions, etc.) or leadership styles in the school. Teacher characteristics include gender, age, professional seniority, openness to professional development, competence (e.g., intrinsic, and extrinsic motivation), and education level (Toropova et al., 2021).

Servant leadership is one of the leadership approaches that affects teachers' job satisfaction and thus their endurance in the profession (Shaw & Newton, 2014). Accordingly, when evaluated in terms of correlational theory, the job may be seen as a fundamental social action and can emphasize established relationships as the main source of inspiration (Blustein, 2011). The most important part of this social aspect is the relationship between the leader and the stakeholders because provides to access the resources they need (Grant, 2008). Servant leaders provide opportunities for stakeholders to express their interests and needs (Eva et al., 2019), and therefore, a reliable relationship is established between leader and followers (Whitener et al., 1998). Servant leaders make their followers feel that they are willing to promote personal development and contribute to their job satisfaction (Chan & Mak, 2014). The relationship between servant leadership and job satisfaction can also be explained by the theory of self-determination. This theory claims that followers have three basic needs: autonomy, competence, and relatedness (Ryan & Deci, 2000). The follower's need for autonomy can be met by the empowering behavior of the servant leader (Van Dierendonck & Nuijten, 2011). While relatedness can be satisfied through establishing relationships with followers (Liden et al., 2008), competence is achieved through servant leaders who help employees grow and develop (Greenleaf, 1998).

METHOD

Research Design

In this study, causal comparative research and correlational survey, which are quantitative research methods, were used. In this study, within the scope of correlational survey, the relationship between school principals' servant leadership behaviors and teachers' job satisfaction was tried to be determined. On the other hand, the causal comparative research method was used to examine whether school principals' servant leadership behaviors and

teachers' job satisfaction differ according to teachers' gender and professional seniority. In the study examining the effect of teachers' perceptions of principals' servant leadership behaviors on job satisfaction, servant leadership was considered as the independent variable and job satisfaction as the dependent variable.

Study Group

The study group consisted of 434 teachers working at public schools (preschool, primary school, secondary school, and high school) from 12 provinces in different regions of Turkey. Convenience sampling method was used to determine the study group. They participated in the study voluntarily in the fall semester of the 2021-2022 academic year. Since there were differences between regions in terms of socio-economic level and cultural characteristics, the study was carried out with participants from provinces in different regions. To minimize the problems that may be encountered during the implementation phase, 455 participants were reached at the beginning. However, in the data analysis process, 21 forms, which were considered as extreme values, were excluded. The z-score examination was performed to control the extreme values. In this context, demographic characteristics of the 434 participants are presented in Table 1.

Table 1. Descriptive Statistics of Participants

Variables	Group	n	%
Gender	Female	314	72.4
	Male	120	27.6
	Toplam	434	100
Educational Level	Associate Degree	4	0.9
	Bachelor's Degree	344	79.3
	Master's Degree	79	18.2
	Doctorate Degree	7	1.6
	Toplam	434	100
Teaching Field	Classroom Teacher (pre-school+primary school)	176	40.6
	Subject Teacher	258	59.4
	Toplam	434	100
School Level	Preschool	13	3.0
	Primary	180	41.5
	Secondary	155	35.7
	High School	86	19.8
	Toplam	434	100
Job Seniority	5 years and over	60	13.8
	6-10 years	110	25.3
	11-15 years	110	25.3
	16-20 years	80	18.4
	21 years and over	74	17.2
	Total	434	100

In Table 1, 72.4% of the study group is female and 27.6% is male. It was seen that 0.9% of the participants have associate degree, 79.3% bachelor's degree, 18.2% master's degree, and 1.6% doctorate degree. 40.6% of the teachers work as classroom teachers and 59.4% as subject teachers. According to school levels, 3.0% of the teachers work in pre-school, 41.5% in primary school, 35.7% in secondary school and 19.8% in high school. 13.8% of the teachers have 5 years and below, 25.3% have 6-10 years, 25.3% have 11-15 years, 18.4% have 16-20 years and 17.2% have 21 years or more job seniority.

Data Collection Tools

The data collection tool consists of three sections. In the first section, there were the questions to determine the demographic characteristics of the participants (gender, branch, professional seniority, etc.). In the second section consisted of the Servant Leadership Scale and the third section consisted of the Job Satisfaction Scale. The validity and reliability study of the scales was presented below.

Servant Leadership Scale

In this study, the Servant Leadership Scale (Liden et al., 2008) was used. This scale was initially developed as a 28-item and 7 sub-dimensions. Later its short form (Liden et al., 2013) consisting of 7 items and one dimension was developed. In this study, a one-dimensional short scale form consisting of 7 items was used. The scale, adapted to Turkish by Kılıç and Aydın (2016). It was arranged in a 5-point Likert type. The scale includes sample items such as “If I have a personal problem, I can ask my principal for help” and “My principal puts my interests before his/her own”. As a result of the Confirmatory Factor Analysis (CFA) conducted by Kılıç and Aydın (2016) within the scope of validity and reliability studies, the model fit indices of the scale ($\chi^2/df=2.658$; GFI=.972; IFI=.978; TLI=.967; CFI=.978); RMSEA=.067) was found to be at the desired level. According to the reliability study conducted by Kılıç and Aydın (2016), the Cronbach Alpha value of the scale was found to be high ($\alpha=.870$). In this study, it was concluded that the scale had a highly reliable internal consistency ($\alpha=.912$) according to the calculated Cronbach Alpha reliability statistics.

Job Satisfaction Scale

The Job Satisfaction Scale was developed by Ho and Au (2006). This scale is a 5-point Likert-type five-item scale. The Job Satisfaction Scale was adapted into Turkish by Demirtaş (2010). The Job Satisfaction Scale consists of sample items such as “I am happy to be a teacher” and “I have achieved important achievements so far and I want to stay as a teacher”. The CFA result ($\chi^2=5.25$; RMSEA=.061) for the construct validity of the scale, was revealed that the scale supports the one-dimensional structure as in its original form. Demirtaş and Alanoğlu (2015) made a CFA analysis of the same scale. They found that the model fit indices were $\chi^2/df=3.818$; GFI=.985; AGFI=.942; CFI=.989; NFI=.985; RMSEA=.086. In this study, the Cronbach Alpha coefficient of the scale was calculated as $\alpha=.862$, and it was concluded that the scale was quite reliable.

Data Collection

The data were collected through an online form containing information about the Servant Leadership Scale, the Job Satisfaction Scale, and the demographic characteristics of participants (gender, branch, education level, etc.). During the data collection process, permission was applied to the school directorates, and the online form was delivered to the participants via WhatsApp and e-mail applications. The data collection process started in October 2021 and finished in December 2021 and took approximately three months.

Data Analysis

SPSS 26 program was used to analyze data. The data analysis was carried out in two stages as the preliminary analysis and basic analysis. Preliminary analyses started with 455 participants who filled out the online form. Missing value and extreme value analysis were performed. No missing data was found, and 21 values determined as extreme values were excluded from the data set. The z-score examination was performed to control the extreme values. Thus, the analysis continued with 434 data. The normality of the data from the assumptions of the regression analysis and the existence of a linear relationship between them

were examined. According to the normality analysis, it was seen that the mode, median and arithmetic mean values of the data were close to each other. Since the skewness and kurtosis coefficients of the Servant Leadership (skewness: -0.829; kurtosis: -0.190) and the Job Satisfaction (skewness: -0.807; kurtosis: -0.293) were in the range of -1 to +1, and the scale graphs (histogram, normal Q-Q and box-line) had a normal distribution, it was concluded that the scores show a normal distribution. The linear relationship between the data was tested with the scatter plot. It was observed that there was a linear relationship between the Servant Leadership and the Job Satisfaction (R^2 Linear=.173).

Within the basic analysis, descriptive statistical analyses (frequency, percentage, mean, etc.) were used to determine servant leadership and job satisfaction perceptions of teachers. Whether servant leadership perceptions of teachers and job satisfaction differ significantly according to independent variables (gender and professional seniority) were analyzed with parametric tests (independent sample t-test and one-way analysis of variance [ANOVA]). To determine from which groups, the difference emerged as a result of the ANOVA test, the Games-Howell Post-Hoc test was used. This post hoc test was used in the study since the number of groups was not equal and the variances did not show equal distribution. The relationship between the data was tested with Pearson Correlation Analysis. Simple Linear Regression Analysis was used to examine whether the Servant Leadership Scale predicted the Job Satisfaction Scale or not.

FINDINGS

According to the sub-problems of the research, school principals' servant leadership behavior and teachers' job satisfaction were examined, and the descriptive scores were given in Table 2.

Table 2. Descriptive Findings Regarding the Servant Leadership and Job Satisfaction

Scales	N	\bar{X}	Sd
Servant Leadership	434	4.02	.90
Job Satisfaction	434	4.17	.78

In Table 2, servant leadership perceptions of participants (\bar{X} =4.02, sd=.90) and job satisfaction (\bar{X} =4.17, sd=.78) were found to be at the "Highly Agree" level. This finding shows that school principals' servant leadership behaviors and teachers' job satisfaction perceptions are high.

An independent sample t-test was conducted to compare teachers' perceptions of servant leadership and job satisfaction by gender. Analysis results were presented in Table 3.

Table 3. Servant Leadership and Job Satisfaction Scores Related to Gender Variable

Scales	Group	N	\bar{X}	Sd	Df	t	p
Servant Leadership	Female	314	3.95	.95	432	-2.59	.01*
	Male	120	4.18	.73			
Job Satisfaction	Female	314	4.21	.77	432	1.69	.09
	Male	120	4.07	.78			

*p<.05

When Table 3 is examined, it is seen that teachers' servant leadership perceptions differ significantly according to their genders ($t_{(432)}=-2.59$; $p<.05$). It was found that male teachers' servant leadership perceptions were higher (\bar{X} =4.18) than female teachers' (\bar{X} =3.95). On the other hand, there was no significant difference between teachers' job satisfaction perceptions ($t_{(432)}=1.69$; $p>.05$) in terms of gender variable.

One-way analysis of variance (ANOVA) was applied to compare teachers' servant leadership perceptions and job satisfaction according to their professional seniority. Analysis results were given in Table 4.

Table 4. Servant Leadership and Job Satisfaction Scores Related to Professional Seniority Variable

Scales	Group	N	\bar{X}	Sd	Df	F	p	Significant Difference
Servant Leadership	(A) 1-5 years	60	3.97	.88				
	(B) 6-10 years	110	3.91	.97				
	(C) 11-15 years	110	4.01	.90	4	1.85	1.117	-
	(D) 16-20 years	80	3.96	.89	429	8		
	(E) 21 years and over	74	4.26	.77	433			
Job Satisfaction	(A) 1-5 years	60	4.31	.74				
	(B) 6-10 years	110	4.11	.85				
	(C) 11-15 years	110	4.05	.81	4	2.96	0.020	C-E
	(D) 16-20 years	80	4.09	.70	429	0		
	(E) 21 years and over	74	4.39	.63	433			

*p<.05

In Table 4, it was seen that teachers' servant leadership perceptions did not differ significantly according to their professional seniority ($F_{(4-429)} = 1.858$; $p > .05$). On the other hand, there was a significant difference ($F_{(4-429)} = 2.960$; $p < .05$) among teachers' job satisfaction levels according to the professional seniority variable. Accordingly, it was found that the job satisfaction scores of teachers with a seniority of 21 years and above ($\bar{X} = 4.39$) were higher than those of teachers with a seniority of 11-15 years ($\bar{X} = 4.05$).

Pearson Correlation Analysis was conducted to determine the relationship between school principals' servant leadership behaviors and teachers' job satisfaction. The results were given in Table 5.

Table 5. Correlation Analysis Results between Servant Leadership and Job Satisfaction

Variables	Servant Leadership	Job Satisfaction
Servant Leadership	1	
Job Satisfaction	.416** (p = .000)	1

* p<0,05, ** p<0,01

In Table 5, servant leadership and job satisfaction had a statistically significant correlation with each other at the $p = .01$ significance level. Accordingly, a positive and moderate relationship ($r = .416$) was found between two variables.

Simple Linear Regression Analysis was conducted to examine whether school principals' servant leadership behaviors predict teachers' job satisfaction according to teacher perceptions. The results were presented in Table 6.

Table 6. Simple Linear Regression Analysis Results

Variables	Non-Standardized Coefficients		Standardized Coefficients	t	p
	B	SE	β		
Job Satisfaction	2.738	.155		17.696	.000
Servant Leadership	.357	.038	.416	9.502	.000

R = .416; adjusted R² = .173; F = 90.287; p = .000

In Table 6, it is seen that the servant leadership behaviors of the principals significantly predicted the job satisfaction of the teachers ($F_{(1-432)} = 90.287$, $p < 0.05$) and had a positive effect ($B = .357$, $\beta = .416$, $t = 9.502$). However, it was found that 17% of the positive change in teachers' job satisfaction was explained by the servant leadership behaviors of the principals ($R = .416$; $R^2 = .173$).

DISCUSSION AND CONCLUSION

In this study, the effect of school principals' servant leadership behaviors on teachers' job satisfaction was examined. In this context, the results revealed that there was a positive and moderate relationship between the servant leadership behaviors of the principals and the job satisfaction of the teachers. In addition, it was concluded that servant leadership was a significant predictor of the variability in teachers' job satisfaction. In previous studies, conducted in educational organizations (e.g., Al-Mahdy et al., 2016; Harvey, 2018; Latif et al., 2020; Latif & Marimon, 2019; Obasuyi, 2019; von Fischer, 2017) similar results were found. With the current research, it has been revealed that teachers see servant leadership as a supportive administrative practice for increasing their job satisfaction. Ndoria (2004) states that the effect of servant leadership on job satisfaction is due to the establishment of high-quality relationships and interactions between the leader and the follower according to the Leader-Member Exchange Theory. Dedicated servant leaders consider the well-being of their followers, which leads to higher job satisfaction and job motivation (Ndoria, 2004). In this context, when teachers' high job satisfaction is considered as a factor that both increases organizational commitment and motivation and reduces turnover, it can be said that the servant leadership approach is significant in ensuring continuity in education and increasing quality.

According to teacher perceptions, school principals' servant leadership levels were found to be high. In the literature, there are many studies including similar findings (Beştaş-Maraççı, 2020; Çiçek, 2015; Doğan & Aslan, 2016; İş & Balcı, 2017; Öter, 2021; Uçar & Uğur, 2020). However, there are also studies (Balay et al., 2014; Doğan, 2015; Salameh, 2011; Ünsal & Usta, 2021) that conclude that the servant leadership behaviors of school principals are at a moderate level. The differences between research results may be explained because of using different servant leadership scales in these studies or the inclusion of participants from different educational levels in the determination of sample/study groups. In addition, teachers perceive their principals' servant leadership behaviors at a high level in the current study. This may be interpreted as the fact that the principals within the scope of the research consider their teachers' needs and wishes before themselves, value them, are willing to support their development, and prioritize serving their teachers by putting their personal interests behind.

In this study, teachers' perceptions of job satisfaction were also high. This result overlapped with the results of previous studies (Aşlamacı, 2017; Başaran & Güçlü, 2018; Dilekçi, 2022; İdi, 2017; Kahveci et al., 2019; Kengatharan, 2020; Sevinç & Durmuşçelebi, 2020; Katıtaş et al., 2022). On the other hand, in the studies conducted by Çakmak and Arabacı

(2017), Demirtaş and Nacar (2018), İnce and Şahin (2016), Ertürk (2021), and Köse (2019), it was concluded that the job satisfaction of teachers was moderate. Moreover, in some studies (e.g., Crossman & Harris, 2006; Mora & Ferrer-i-Carbonell, 2009; Şahin, 2013) it was revealed that teachers have low job satisfaction. Since it is significant in obtaining successful student outcomes and increasing the quality of education, high job satisfaction level of teachers is desirable. However, it is noteworthy that there are different studies in the literature revealing that teacher's job satisfaction is moderate or low. This may be due to the different experiences of teachers on issues such as effective working conditions, feelings and thoughts about work, individual characteristics, school structure, leadership characteristics of administrators, student, and parent profiles.

Significant difference has not emerged between job satisfaction scores of participants in terms of gender variable. In other words, it was concluded that the job satisfaction scores of male and female teachers were similar. There are several studies including similar findings (Kış et al., 2012; Koruklu et al., 2013; Sağır et al., 2014; Telef, 2011). However, there are also studies in the literature that show different results. According to similar research results, female teachers experience more job satisfaction than male teachers (Gligorovic et al., 2014; Kumari et al., 2014; Ogedengbe et al., 2018; Özkan & Akgeç, 2022; Tunacan & Çetin, 2009) in some studies, on the contrary, job satisfaction of male teachers was higher than female teachers (Mennon & Reppa, 2011; Özkan, 2017; Tasnim, 2006). In this context, it is possible to say that job satisfaction cannot be explained only by the gender variable. Consequently, different factors cause differentiation in job satisfaction according to gender, effective physical conditions in the teacher's work life, administrative support, leadership styles, relations with students, parents, and colleagues, etc. Within the scope of this study, it may be explained with different school experiences and different individual experiences in terms of psychological, social, cultural, and economic aspects.

The results showed that, there was a significant difference between teachers' job satisfaction and professional seniority. The job satisfaction of teachers with a seniority of 21 years and above was higher than the teachers with a seniority of 11-15 years. There are similar studies including similar findings in the literature (Duman, 2006; Gündoğdu, 2013; Kılıç, 2011). In these studies, it was emphasized that teachers' job satisfaction increases based on the increase in professional seniority. This may be due to the fact that teachers feel at the peak of their careers with the increase in their professional seniority or that they have adopted the negative conditions they have encountered during their professional life. However, there are also studies (e.g., Erdoğan, 2017; Karakuzu, 2013; Sharma & Jyoti, 2009; Usta, 2015) concluding that there is no significant difference between teachers' professional seniority and their job satisfaction. In some studies (e.g., Bozkurt & Bozkurt, 2008; Meziroğlu, 2005), it was found that teachers experienced high job satisfaction in the first and last years of their profession, they experienced lower job satisfaction in their middle years. These differences between research results may be explained based on the other variables.

The results revealed that the male teachers' perceptions of servant leadership were higher than the female teachers. Similar finding is seen in the research of Kahveci (2012). However, there are studies in literature including different results. In some studies (e.g., Al-Mahdy et al., 2016; Doğan, 2015; Ekinci, 2015; Türkmen & Gül, 2017; Van Maele & Van Houtte, 2012), the servant leadership scores are high in favor of female participants. However, in some of them the researchers did not find a significant difference between the teachers' perceptions about servant leadership characteristics of principals in terms of gender variable (Barbuto & Hayden, 2011; Salameh, 2011; Ünal, 2020; Ünsal, 2018; Yılmaz, 2013). The difference in terms of the gender variable may be explained based on different variables.

Different organizational climate and the socio-cultural characteristics of the regions should be considered in explaining this difference.

The results also showed that, there was no significant difference between the professional seniority of the teachers and the servant leadership behaviors of the principals. In other words, teachers' perceptions of principals' servant leadership behaviors do not change according to their professional seniority. Similar results (e.g., Kahveci, 2012; Ünal, 2020; Ünsal, 2018) are seen in previous studies. This may be interpreted as the fact that the principals communicate with the teachers at an equal level without considering the differences in seniority, are willing to meet their needs and expectations. As a result, it may be asserted that the teachers feel that they are not exposed to discriminatory administrative practices due to their seniority.

According to this research, principals who show servant leadership behaviors contribute to increasing teachers' job satisfaction. With this study, it was aimed to raise awareness of school leaders about how important their behavior is in increasing the job satisfaction of their followers. Accordingly, principals who want to increase teacher job satisfaction in their schools should employ leadership characteristics such as aiming to serve their teachers before themselves, prioritizing the interests of their teachers over their own, and giving priority to the needs and wishes of their teachers.

Limitations and Recommendations

Some limitations need to be emphasized when interpreting the results of this study. First, this study has a cross-sectional structure that brings limitations in revealing the cause-effect relationship. In this study, only information about the strength of the relationships between the variables is obtained. This limitation can be overcome with the use of longitudinal research designs in the future. As a second limitation, the direct effect of servant leadership on job satisfaction was examined in this study. More research is needed in the future to determine whether different variables (motivation, organizational commitment, organizational citizenship behavior, organizational justice, organizational climate, self-efficacy, life satisfaction, etc.) have a mediating effect on the relationship between the two variables. As a third limitation, this research provides a framework for how servant leadership will affect job satisfaction when implemented in K-12 level public schools. In the future, this study may be replicated in other educational institutions, including private schools at the K-12 level. The fourth limitation is related to the size of the study group. Although teachers from 12 provinces from different regions of Turkey participated in this research, it is not possible to generalize the data for all schools in Turkey. For this reason, this limitation may be reduced by expanding the research area and including more provinces from different regions while determining the study group in future studies. Finally, in future studies, the individual and collective effects of different leadership approaches (distributed leadership, transformational leadership, transactional leadership, etc.) on job satisfaction, as well as servant leadership, can be examined.

With this study, it is aimed to give a new perspective to the literature on the effect of servant leadership on teacher job satisfaction. The importance of servant leadership behaviors to be exhibited by school principals in increasing teacher job satisfaction has emerged. Principals should show more servant leadership characteristics to increase the job satisfaction levels of teachers who are directly effective in obtaining successful student outcomes in schools. In this context, it is emphasized that the examination should be the main criterion with a merit-based approach in the selection and appointment of school principals. However, it is suggested that different criteria for professional development such as teaching experience, administrative experience, postgraduate education in the field of educational administration

and participation in pre-service and in-service training studies on leadership should be considered in the evaluations.

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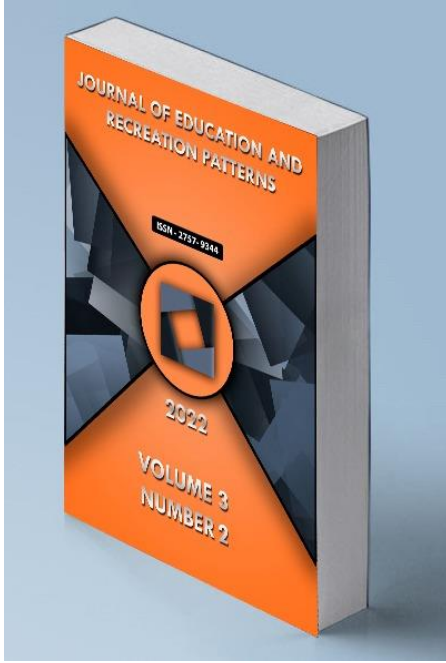
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Examination of the Relationship between Positive Effects of Tourism and Attitudes towards Sports Tourism

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ABSTRACT

This study aims to examine the attitudes of teachers towards sports tourism as well as their perceptions of the positive effects of tourism within the scope of the perception of tourism development effects. The study also aims to reveal whether there is a relationship between the perception of the positive effects of tourism and the attitude towards sports tourism. It is a quantitative study carried out in a relational survey model. The sample of the research consists of 210 participants working in schools within the Göksun and Pazarcık District Directorates of National Education of Kahramanmaraş province in Turkey. The data were analyzed using statistical software package programs. As a result of the research, the perceptions of the participants towards the positive effects of tourism and their attitudes towards sports tourism were found to be positive in all sub-dimensions in the scale of perception of tourism development effects. Positive, high, and medium-level relationships were found between the participants' perception scores of the positive effects of tourism and their attitudes towards sports tourism in terms of sub-dimensions. According to the path analysis, the positive dimensions of the "Perception of Tourism Development Effects Scale", which include the economic and socio-cultural dimensions, predicted all the sub-dimensions of the "Attitude towards Sports Tourism Scale" at a significant level and that the environmental dimension, which is another positive dimension, predicted only the job opportunity sub-dimension at a significant level.

Keywords: Teacher, Positive Effects of Tourism, Sports Tourism, Attitude.



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INTRODUCTION

Sport has been diversifying and developing from past to present. In recent years, the sport industry has entered into close relations with other industries in socio-cultural, economic, environmental, employment, organization, and similar dimensions. With the close relationship of the sport industry with other sectors, new paradoxes have inevitably occurred. In the context of developments diversity continues to increase as new entrepreneurial ideas emerge. In addition to its relationship with different sectors, the sport industry continues to develop in close relationship with the tourism sector in various dimensions. The field of sports and tourism has an important role in the life of the individual and society. Therefore, within the scope of the purpose of this research, research on sport and tourism is considered important in terms of accessing new and useful information. By means of the scales used in this study, it is predicted that it will provide a good benefit for understanding teachers' attitudes towards sports tourism and their perceptions of the positive effects of tourism and for studies in this context.

With the increase in the living standards of people living in developed countries, sports tourism has emerged as a new type of tourism in line with the different needs and expectations that arise in consuming free time (Hazar, 2007). The concept of sports tourism is defined as the involvement of individuals in tourism events in order to participate in sporting events or to watch sports competitions. Sports tourism includes individual or group participation in sports-related competitions, watching competitions or travel within or outside the country for these competitions (Hudson, 2003). Sports tourism is divided into two categories. The first one is to participate in sports while the second one is to travel as a sports spectator. Therefore, sports tourism is the departure from the place of residence of those who define travelling, participate in sports activities, or participate as spectators, perhaps for non-commercial reasons. Sports tourism includes travel from home or work for all sports activities with active and passive participation, incidental or planned participation, or participation for commercial or non-commercial reasons (Alpullu, 2011).

It is possible to evaluate the sporting and touristic values of destinations under the name of sports tourism. Sports tourism activities, which have the potential to contribute to local development, can positively affect the health and quality of life not only of participants and spectators but also of local residents (Akyol & Akkaşoğlu, 2021; Bertan, 2010). Tourism effect is expressed as a set of activities that broadly regulate the environment or region in which it is located. Tourism development has an impact on the public at various levels. The tourism development effect falls into three categories: economic effects, socio-cultural effects, and environmental effects (Andereck et al., 2005; Güneş, 2014).

Sports and tourism are intertwined. Sport functions as a sub-dimension of tourism, and tourism functions as a sub-dimension of sport, and they turn into a concept called 'sport tourism' together with infrastructure, participants, and other factors (Atılğan & Tükel, 2022). Today, sports tourism is highly popular and crucial. The concept of sports tourism is generally called sports tourism or tourism sport in two ways (Robinson & Gammom, 2004).

Sports and tourism converge as individuals prefer being engaged in new sports branches or activities in places other than those preferred for their daily exercise habits or lifestyles and keep being engaged such activities even upon return from travel. Sport and tourism can contribute to the development of each other in different ways. Sports events are recognized as a strong component of sports tourism (Duman, Şahin, Uluç & Bulut, 2021; Gammon & Robinson, 2003; Ntloko, & Swart, 2008; Weed & Bull, 2004; Zauhar, 2004). Tourism and sports are key elements of today's culture and have a certain impact on the behaviour of society.

Especially since the 1960s, sports have become an international issue with the great media attention, money, and political attention (Ottevanger, 2007). From an economy point of view, since the 1970s, investments in both tourism and sports have increased rapidly (Zgurovski & Akin, 2016). With the effect of sports organizations that have a global impact on sports tourism, positive contributions were made to the promotion of the country organizing the organization, to its economic development, to the increase of employment areas, to its commercial activities, to the increase of interest in sports, and to the prestige of the country. The opportunities for the joint development of the concepts of sports and tourism have also resulted in organizations that host large-scale events and sporting events (Akyol & Akkaşoğlu, 2021; Duman et al., 2021). The increase in business opportunities, the personal contributions of individual entrepreneurs and the economic contributions of investors are significantly effective in the positive effects of tourism. In addition to these factors, good organizations will help witness socio-cultural, environmental, and economic benefits more concretely.

METHODS AND MATERIALS

Research Model

The study is a quantitative study carried out in a relational screening model. This study was aimed at determining the attitudes of physical education teachers, classroom teachers, and other branch teachers towards sports tourism and their perceptions towards the positive effects of tourism. In addition, the level of relationship between the attitude towards sports tourism and the perception towards the positive effects of tourism was determined. In this study, consent was obtained from all participants with the 'Informed Voluntary Consent Form'.

Study Site Selection and Research Questions

Kahramanmaraş region, which is one of the Turkish cities, hosts skiing, mountaineering, plateau and cave tourism and has many important historical and cultural sites such as the Eshab-ı Kehf, cave of the seven sleepers, castle, Döngel Waterfalls, historical mosques, the ancient city of Garmenia, museum, ruins and many other touristic destinations (Atılğan & Tükel). The research questions are as follows in this regard:

- 1- What are the levels of participants' perceptions towards the positive effects of tourism and their attitudes towards sports tourism?
- 2- What is the relationship between teachers' perceptions of the positive effects of tourism and their attitudes towards sports tourism in terms of sub-dimensions?
- 3- What is the level of relationship between teachers' attitudes towards sports tourism and their perceptions of the positive effects of tourism in terms of sub-dimensions?
- 4- Are there any sub-dimensions between teachers' perceptions of the positive effects of tourism and their attitudes towards sports tourism?

Population and Sample

The population of the study consists of teachers working in Kahramanmaraş province. The sample of the study consists of 210 participants working in schools selected by the random sampling method within the Göksun and Pazarcık District Directorates of National Education in Kahramanmaraş province of Turkey operating under the Kahramanmaraş Provincial Directorate of National Education. The reason why teachers were chosen as the sample is that they have professions that raise children and young people who make up the next generations, guide them and make a significant contribution to their learning, in terms of their reflection on society. Data collection began in March 2022 and was completed in June 2022. Scale forms

were sent online and face-to-face to participants through school principals and individually, providing usable feedback from 210 participants.

Table1. Participant information included in the research sample

Demographic Variables		N	%
Gender	Female	78	37.1
	Male	132	62.9
Age	20-30	36	17.1
	31-40	90	42.9
	41 and over	84	40.0
Branch	Physical Education and Sports	48	22.9
	Classroom Teaching	31	14.8
	Others	131	62.4

Data Collection Tools

Attitude towards Sports Tourism Scale: In this study, the attitude towards sports tourism scale developed by Kardaş & Sadık (2018) was used to examine teachers' attitudes towards sports tourism. As a result of the Exploratory Factor Analysis based on the data obtained, a scale consisting of 14 items emerged. Cronbach Alpha and Spearman – Brown correlation tests were used for reliability analysis. The Cronbach Alpha value of the scale was .86 while it was .73 for job opportunity, .82 for personal contribution, .81 for economic contribution, and .68 for organization. In this study, Cronbach Alpha coefficient was .95 while it was .84 for job opportunity, .87 for personal contribution, .81 for economic contribution, and .54 for organization.

Perception of Tourism Development Effects Scale: The scale developed by Güneş (2014) consists of statements aimed at measuring the perceived positive effects and negative effects of tourism. 5-point Likert-type scale was used. Turan (2018), who found parallel results with the dimensions obtained by Güneş (2014), found the Cronbach Alpha value .70 for the overall scale, .80 for socio-cultural, .75 for economic, and .79 for environmental. In this study, Cronbach Alpha coefficient was .95 while it was .89 for socio-cultural, .94 for economic, and .94 for environmental. Within the scope of this study, the perceived positive effects of tourism were evaluated for analysis.

Data Collection and Analysis

Scale forms were prepared face-to-face and online and sent to the participants to fill out. The data of the study were analysed by using statistical software package programs. The arithmetic mean and standard deviation values of the participants' perception towards the positive effects of tourism scale and the sub-dimensions of the attitude scale towards sports tourism were determined. The relationships between the variables were examined by the path analysis method. Path analysis, unlike regression analysis, is a type of analysis that allows more than one dependent variable to be used together (Şen, 2020). In the path analysis, the positive dimensions of the "Perception of Tourism Development Effects Scale", which include environmental, economic, and socio-cultural, are extrinsic (exogenous), while the sub-dimensions of the "Attitude towards Sports Tourism Scale", which include economic contribution, personal contribution, job opportunity, and organization are internal (endogenous) variables. The "Maximum Likelihood (ML)" method, which is used as the most common method for estimating parameters for path analysis, was preferred (Şen, 2020).

FINDINGS

In this section, statistical evaluation of the data was made and the results of the evaluation were shown in tables.

Table 2. Arithmetic mean and standard deviation values of the participants' perception towards the positive effects of tourism scale and the sub-dimensions of the attitude towards sports tourism scale

Scales and Sub-dimensions		N	Min-Max	\bar{x}	SD
Attitude Towards Sports Tourism Scale	Job Opportunity	210	1-5	4.21	.67
	Personal Contribution	210	1-5	4.37	.70
	Economic Contribution	210	1-5	4.40	.70
	Organization	210	1-5	4.20	.77
Perception Towards the Positive Effects Of Tourism Scale	Socio-cultural	210	1-5	4.24	.74
	Economic	210	1-5	4.40	.70
	Environmental	210	1-5	3.86	1.07

Table 2 highlights that the perception of participant towards the positive effects of tourism and their attitudes towards sports tourism are at a high level and positive in all sub-dimensions.

The Relationship Between the sub-dimensions of the “Perception of Tourism Development Effects Scale” and the Positive Effects of Tourism and the Attitude towards Sports Tourism: The "Pearson Moments Multiplication Correlation Coefficient" technique was used to determine the relationship between the participants' perceptions of the positive effects of tourism and the attitude towards sports tourism and the results are presented in Table 3.

Table 3. Pearson Moments Multiplication Correlation Results between Participants' Perception towards the Positive Effects of Tourism Scores and Attitude towards Sports Tourism Scores

Variables	1	2	3	4	5	6	7	8	9
1.Overall	-	.899*	.895*	.854*	.801*	.690*	.796*	.811*	.644*
2. Socio-cultural		-	.849*	.599*	.822*	.730*	.811*	.821*	.634*
3. Economic			-	.573*	.849*	.762*	.842*	.843*	.643*
4. Environmental				-	.507*	.396*	.508*	.533*	.458*
5. Attitude Scale - Overall					-	.947*	.933*	.943*	.817*
6. Job Opportunity						-	.814*	.848*	.741*
7. Personal Contribution							-	.889*	.670*
8. Economic Contribution								-	.704*
9. Organisation									-

N=210 *p<,05

Table 3 highlights that the participants’ scores for perception towards the positive effects of tourism and the variables of personal contribution (r=.80) and economic contribution (r=.81) were positively high while there were positive, moderate, and significant relationships between the variables of job opportunity (high level limit) (r=.69) and organization (r=.64). A positive high level was found between the scores of the participants for the attitude towards

sports tourism scale and socio-cultural ($r=.82$) and economic ($r=.85$) variables while there were positive, moderate, and significant relationships between the scores of the participants for the attitude towards sports tourism scale and the environmental ($r=.51$) variable.

Path Analysis Findings Regarding the Relationships between Variables:

As a result of the path analysis performed using the Maximum Likelihood method, the chi-square value of the model was found to be significant ($p<.05$). However, it was seen that the model fit values were estimated as CFI=.94, TLI=.93, RMSEA=.07 and SRMR=.05 and the values were within acceptable limits. A diagram model of standardized path coefficients for path analysis is presented in Figure 1. In order to make it clear in the model, only meaningful path coefficients are included.

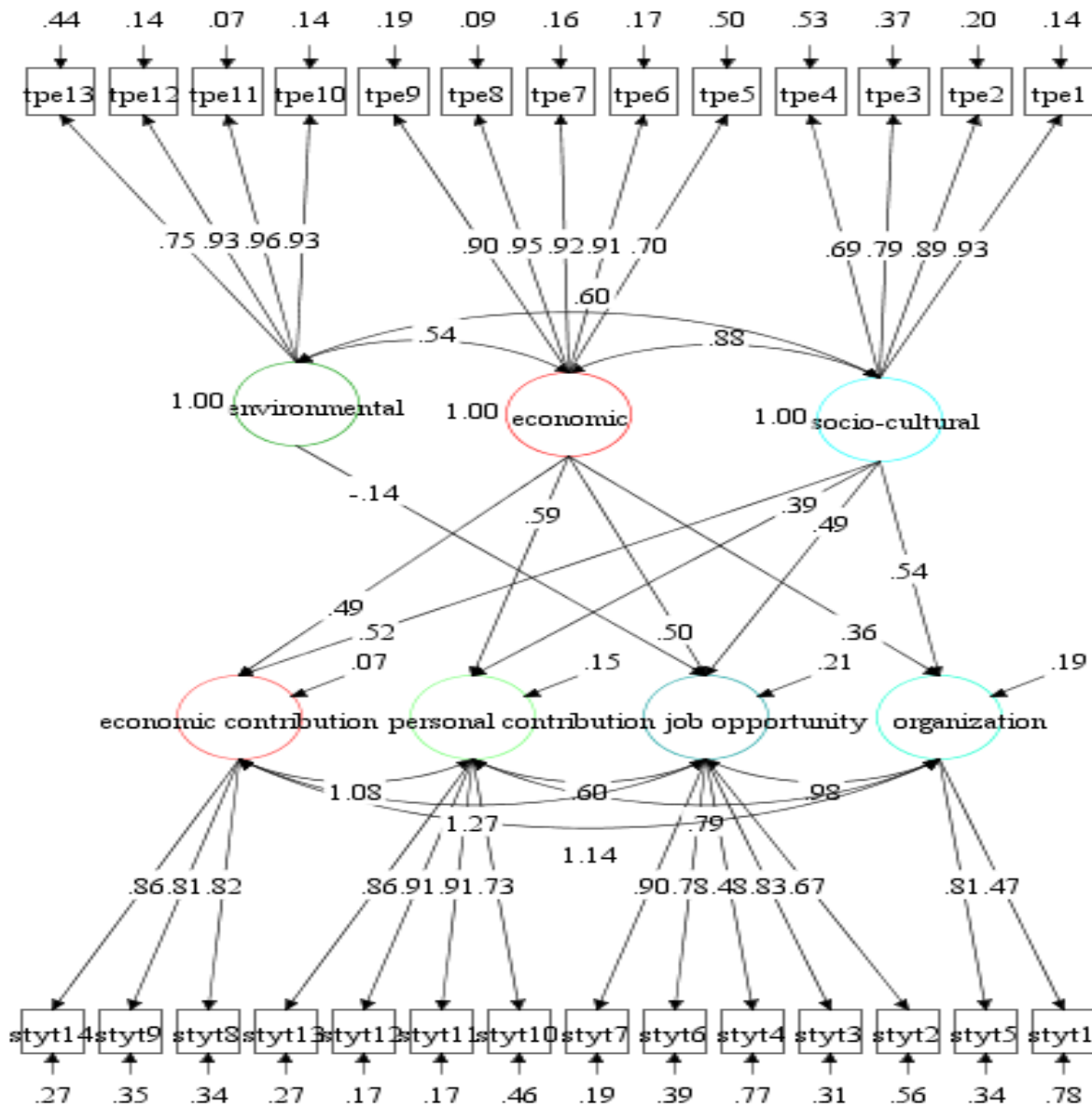


Figure 1. Diagram model for path analysis

Considering the standardized coefficients of the road analysis, it was observed that the economic and socio-cultural dimensions, which are the positive dimensions of the "Perception of Tourism Development Effects Scale", significantly predicted all the sub-dimensions of the "Attitude towards Sports Tourism Scale" ($p<.05$). It was also observed that the environmental dimension, which is another positive dimension of the "Perception of Tourism Development

Effects Scale”, significantly predicted only the job opportunity sub-dimension of the “Attitude Scale towards Sports Tourism” ($p < .05$). Finally, the environmental dimension was not a significant predictor of the organization, personal contribution, and economic contribution dimensions ($p > .05$).

The standardized regression loads of economic contribution, personal contribution, job opportunity, and organizational dimensions on the socio-cultural dimension were .52, .39, .49, and .54, respectively, while the standardized regression loads of these dimensions on the economic dimension were estimated as .49, .59, .50, and .36, respectively. The standardized regression load of the job opportunity dimension on the environmental dimension was estimated as -.14.

The direct relationship coefficients between the variables show that there was a positive and moderate relationship between the positive attitude towards the socio-cultural and economic effects of tourism and the attitude towards sports tourism. There was a low and negative relationship between the positive attitude towards the environmental effects of tourism and the job opportunity dimension.

In addition, the r-square value was calculated as .93 for economic contribution, .85 for personal contribution, .78 for job opportunity, and .81 for organization. In other words, the socio-cultural, economic, and environmental dimensions explain 93% of the variance in the economic contribution variable, 85% of the variance in the personal contribution variable, 78% of the variance in the job opportunity variable, and 81% of the variance in the organization variable.

DISCUSSION

In this study, the perceptions and attitudes of Physical Education and Sports Teachers, Classroom Teachers, and the teachers of other branches were determined.

What are the levels of participants' perceptions towards the positive effects of tourism and their attitudes towards sports tourism?

It was found that the perception of the participants towards the positive effects of tourism and their attitudes towards sports tourism were at a high level and positive in all sub-dimensions. Turan (2018) reported that the general average of the perceptions of the local people about the effects of tourism and the economic and environmental positive effects sub-dimensions were high, and the general average of the socio-cultural positive effects sub-dimension was at a moderate level. Scientists who conduct research and studies on the effects of tourism have called these effects as economic, environmental, and socio-cultural (Akova, 2006). According to Harrill (2004), when tourism activities are not carried out with the right planning or management, the economic benefits of tourism do not show an equal distribution. The results of the research are different in the dimension of socio-cultural positive effects and support each other in other dimensions.

A positive high level was found between the participants' scores for perception towards the positive effects of tourism and the variables of personal contribution ($r = .80$) and economic contribution ($r = .81$) while there were positive, moderate, and significant relationships between the variables of job opportunity (high level limit) ($r = .69$) and organization ($r = .64$). It can be stated that as the participants' attitudes towards job opportunities, personal contribution, economic contribution, and organizational variables increase, their perceptions of the positive

effects of tourism regarding the development effects of tourism increase. According to Güneş (2014), tourism is viewed as a crucial development tool for developing as well as developed societies. Recognizing the positive economic, social, and environmental impacts resulting from tourism development, local people are taking more initiatives to ensure that more tourists visit their regions.

What is the relationship between teachers' perceptions of the positive effects of tourism and their attitudes towards sports tourism in terms of sub-dimensions?

A positive and high-level relationship was found between the participants' scores for attitude towards sports tourism and socio-cultural ($r=.82$) and economic ($r=.85$) variables while there were positive, moderate, and significant relationships were found between the environmental ($r=.51$) variable. It can be stated that as the participants' perceptions of socio-cultural, economic, and environmental variables increase, their attitudes towards sports tourism increase. Duman et al. (2021) concluded that sport and tourism are integrated concepts and each event that occurs in tourism can affect sports tourism as well as the given country's economy. Sports tourism is an important element of tourism, which is one of the most important industries in the world and in Turkey (Akyol & Akkaşoğlu, 2021). Researchers have made statements that support the results of this study.

In modern tourism, sports not only have a perceptual role, but also an important content of accommodation and often the main motive for traveling to a particular tourist destination. Tourism-based activities, products, services reveal significant social, economic, and environmental impacts that vary from community to community. In some cases, tourism development has varying levels of impact on the public. One of the factors that encourage people to participate in tourism is sport. Factors such as the level of development of the tourism region, the life expectancy of the people, the economic commitment to tourism, whether the region is a local or not, the level of communication with tourists, the types of sport and sport services, and the unique experiences expected from sports activities can be decisive in the results of scientific papers (Aracı, 1999; Dyer et al., 2007; Güneş, 2014; Peric, 2010).

What is the level of relationship between teachers' attitudes towards sports tourism and their perceptions of the positive effects of tourism in terms of sub-dimensions?

As a result of the path analysis using the Maximum Likelihood method in the path analysis findings for the relationships between the variables, the chi-square value of the model was found to be meaningful. Model fit values were determined to be within acceptable limits. The value ranges of confirmatory factor analysis and concordance indices, which are included in the studies of Erkorkmaz et al. (2013) and the value expressions found in this research support each other.

Considering the standardized coefficients of the path analysis, the positive dimensions of the "Perception of Tourism Development Effects Scale" predicted all sub-dimensions of the "Attitude towards Sports Tourism Scale". The environmental dimension, which is another positive dimension of the "Perception of Tourism Development Effects Scale", was found to predict only the job opportunity sub-dimension of the "Attitude Scale towards Sports Tourism" at a significant level. It was also determined that the environmental dimension was not a significant predictor on the dimensions of organization, personal contribution, and economic contribution. According to Güneş (2014), in addition to economic effects, tourism development, which brings socio-cultural and environmental effects, requires careful planning process.

Are there any sub-dimensions between teachers' perceptions of the positive effects of tourism and their attitudes towards sports tourism?

The standardized regression loads of economic contribution, personal contribution, job opportunity, and organization dimensions on the socio-cultural dimension were .52, .39, .49, and .54, respectively. Besides, the standardized regression loads of these dimensions on the economic dimension were estimated as .49, .59, .50, and .36, respectively. The standardized regression load of the job opportunity dimension on the environmental dimension was estimated as -.14. These values show that a one-unit change in the socio-cultural and economic dimension scores of the participants can cause .52 and .49 points change on the economic contribution dimension, .39 and .59 points change on the personal contribution dimension, .49 and .50 points change on the job opportunity dimension, and .54 and .36 points change on the organization dimension, respectively. Besides, a one-unit change in participants' environmental dimension scores can also cause a -.14 point change in the job opportunity dimension. Although these values do not mean causality, they statistically reveal that the positive attitude towards the positive socio-cultural and economic effects of tourism can positively increase their attitudes towards sports tourism in terms of job opportunities, personal contribution, economic contribution, and organization. In addition, a positive attitude towards the environmental effects of tourism shows that it may cause a decrease in the job opportunity attitudes of the participants. There may be a decrease in the attitude of the participants towards the possibility of work due to the positive attitude towards the protection of the environment. For example, while tourism sectors are engaged in building in the environment, areas of trees and forests are decreasing, the natural structure of the environment is deteriorating, visual, air, and sound pollution is increasing. The increase in the number of people who are sensitive to these and similar reasons can suppress the job opportunity factor.

The direct relationship coefficients between the variables show that there was a positive and moderate correlation between the positive attitude towards the socio-cultural and economic effects of tourism and the attitude towards sports tourism. There was a low and negative relationship between the positive attitude towards the environmental effects of tourism and the job opportunity dimension. In case of showing sensitivity to environmental effects, job opportunities can be thrown into the background. In this context, Özdemir (2020) reported that if tourism-related activities cause destruction in nature, tourism will in a way set itself on fire. If tourism adds a quality to these products, it will also strengthen its own future. Remembering that we get 50% of our oxygen from algae in the sea, we must protect our seas, separate waste water, protect our oxygen storage forests, install filters in factory chimneys to protect oxygen in the air, appreciate the world we live in and leave it to future generations in a liveable way. As a result of the research conducted by Ekici (2013) on the relationship between the perceived positive effects of tourism and the attitude towards tourism development support, as the positive effects perceived by local people increased, the support perception increased. Research results show parallelism.

The r-squared value was calculated as .93 between independent variables and economic contribution, .85 between independent variables and personal contribution, .78 between independent variables and job opportunity, and .81 between independent variables and organization. In other words, the socio-cultural, economic, and environmental dimensions, which are the positive dimensions of the "Perception of Tourism Development Effects Scale", together explain 93% of the variance in the economic contribution variable, 85% of the variance in the personal contribution variable, 78% of the variance in the job opportunity variable, and 81% of the variance in the organization variable. Bulut et al. (2021) reported that

tourism is an industry that intensively needs natural, environmental, and cultural resources and uses them as economic inputs. According to Lepp (2007), one of the indicators that tourism is accepted is the attitude of the local people towards tourism. According to Ko & Stewart (2002), the fact that tourism development has negative effects at the local level other than positive effects is the most important reason for focusing on the studies carried out in this area. According to Akyol & Akkaşoğlu (2021), there is an important and growing intersection between sports and tourism. The statements of the researchers support the results of this study.

RESULT

This study has some limitations. The research was carried out only on Physical Education and Sports, Classroom and other branch teachers. Teachers and other education workers outside these branches were not included in the study. The research methods were chosen correctly and sufficient sample samples were used to show the objectivity of the results. In the study, care was taken to use current and modern literature sources.

As a result, within the scope of this research, the level of relationship between teachers' attitudes towards sports tourism and their perceptions towards the positive effects of tourism and the dependent variables of independent variables were determined. In the following studies, it may be possible to reach new results by using the scales used in this study together with different scales. For example, it is estimated that significant contributions will be made to the literature if analyzes can be made on the positive effects of tourism, the negative effects of tourism, and the scales for the benefit dimension of tourism, sports tourism, recreation, animation and similar concepts. Thus, opportunities for the development of new ideas can be offered. In addition, by including all education staff in the research, conducting research in different regions and in different countries will provide very solid and interesting findings.

Recommendations

Employment and job opportunities are increasing in regions where tourism is developed and active. There must be organizations that will benefit tourism by developing a positive understanding of the attitudes and behaviours of the people and providing personal contributions to the development of socio-cultural values and the number of such organizations must be increased.

The central and local authorities, which are authorized to provide a positive perspective for the development of sports tourism and general tourism, have important duties. Authorized bodies can implement the necessary innovations and regulations in line with positive expectations through cooperation and coordination with entrepreneurs and investors. New steps that will benefit the general can be taken. As a result, it is recommended that all stakeholders act in cooperation in accelerating the positive effects of tourism towards the desired levels.

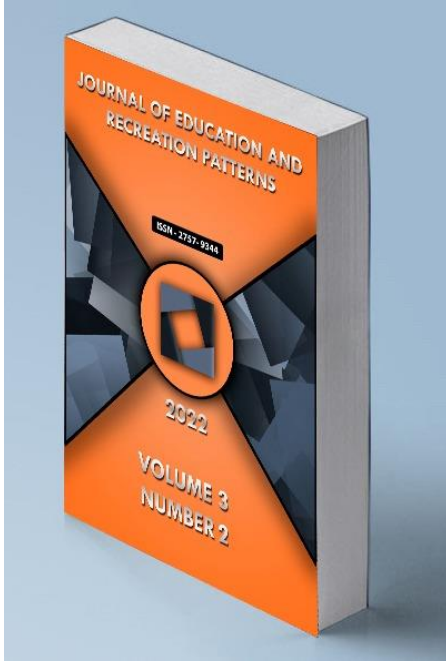
Acknowledgements or Notes

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An Examination of Positive and Negative Reciprocity Norms as to Serious Leisure Activities and Demographic Variables

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An Examination of Positive and Negative Reciprocity Norms as to Serious Leisure Activities and Demographic Variables

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ABSTRACT

Research conducted on positive and negative reciprocities mainly aims to determine the variables that impact this phenomenon. To this end, this study sought to ascertain the influence of participation in trekking and kickboxing as serious leisure activities along with several other variables on the positive and negative reciprocity attitudes. The study utilized a descriptive survey design and a random sampling method. The findings revealed a significant difference between the choice of serious leisure activities and demographic variables such as gender, age, and education level. Additionally, the mean scores of positive reciprocity attitudes increased proportionately to age and education level. Furthermore, the mean scores of positive reciprocity attitudes of the trekking participants were significantly higher than those of kickboxing participants.

Keywords: Serious Leisure Activities, Positive and Negative Reciprocity, Kickboxing, Trekking



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INTRODUCTION

Harming others might trigger feelings of anger and revenge (Eisenberger et al., 2004). Rewarding good behaviors and punishing bad ones is one of the most basic attitudes observed since the emergence of humans on the historical stage (Uymaz, 2019). According to Aristotle, contempt for people brings out anger and a sense of revenge, the fulfillment of which can be pleasurable (Aristotle, 2001). The damage inflicted against the one received at specific intervals in history has manifested itself as a socially displayed attitude for revenge. This attitude is characterized as “tit-for-tat” in the Code of Hammurabi, considered as the oldest written law in history (Barmas, 2020). This expression indicates that human beings have adopted the attitude of reciprocity as a social rule. As a matter of fact, the books of the monotheistic religions (i.e., Torah, Bible, and Qur'an) state that good behaviors should be rewarded, and bad ones should be punished. This punishment or punitive system is described in the Torah as follows: “¹⁹If anyone maims his fellow, as he has done so shall it be done to him. ²⁰fracture for fracture, eye for eye, tooth for tooth. The injury he inflicted on another shall be inflicted on him. ²¹One who kills a beast shall make restitution for it; but one who kills a human being shall be put to death.” (Torah-Leviticus, 24:19-21). In response to the tit-for-tat phenomenon expressed in the Torah, such statements as: “³⁸You have heard that it was said, 'AN EYE FOR AN EYE, AND A TOOTH FOR A TOOTH.' ³⁹But I say to you, do not resist an evil person; but whoever slaps you on your right cheek, turn the other to him also. ⁴⁰If anyone wants to sue you and take your shirt, let him have your coat also. ⁴¹Whoever forces you to go one mile, go with him two.” (Holy Bible-Matthew, 38-41) in the Holy Bible suggest that individuals should also react positively in the face of adverse situations. Unlike the Holy Bible, such statements as: “O ye who believe! Retaliation is prescribed for you in the matter of the murdered; the freeman for the freeman, and the slave for the slave, and the female for the female. And for him who is forgiven somewhat by his (injured) brother, prosecution according to usage and payment unto him in kindness. This is an alleviation and a mercy from your Lord. He who transgresseth after this will have a painful doom.” (Qur'an-Al Baqarah, 178) “The guerdon of an ill deed is an ill the like thereof. But whosoever pardoneth and amendeth, his wage is the affair of Allah. Lo! He loveth not wrong doers.” (Qur'an-Shuraa, 42) in the Qur'an signal the phenomenon of reciprocity. That is, reciprocity is the act of response to any situation (good or bad).

Reciprocity is generally categorized into three types: *generalized*, *balanced*, and *negative reciprocity* (Cherry, 2022). Generalized reciprocity manifests itself in relationships between family or friends. Individuals do not expect favors from each other in this type of reciprocity. They act by assuming that any good they have done will return to them by their family or friends (Yamagishi and Kiyonari, 2000). In balanced reciprocity, the good that individuals do is assumed to return within a certain period of time. This type of reciprocity shows itself mostly in business relations (Cherry, 2022; MacCormack, 1976). Negative reciprocity, on the other hand, refers to the punishment of bad actions or selfishness (Shaw et al., 2019). Human beings definitely respond to every situation. However, whether this response is positive or negative depends on the individual. So, in which situations do individuals respond positively or negatively? Although there is no definite answer to this question, Gouldner (1960) reported that the main reason behind individuals' norms of negative responses is the culture they grow up in and their anger tendency. As a matter of fact, Eisenberger et al. (2004) determined that angry individuals are more likely to respond negatively. Walster et al. (1978), on the other hand, stated that individuals experience the feeling of injustice when giving more than they receive emotionally or physically, and feelings of guilt, indebtedness, and shame when receiving more than they give. Hence, a tendency to respond positively or negatively arises. Concerning this, Gang and Stukas (2015) reported that individuals tend to have less

positive responses when experiencing insufficient benefits compared to excessive benefits and equity.

Many factors affect the tendency to respond positively compared to the phenomenon of negative response. These can be listed as gender, perceived income status, age, education level, and the culture to which an individual belongs (Aksu and Varol, 2022; Aksu vd., 2021; Aksu vd., 2022; Atilgan and Arslan, 2022; Demirel et al., 2021; Eisenberger et al., 2004; Gouldner, 1960; MacCormack, 1976; Merton, 1957; Kaya et al., 2020). In addition to these variables, we believe that recreation and serious leisure activities also impact the tendency to respond positively and negatively. Indeed, studies conducted on recreation and serious leisure activities have shown that participation in such activities contributes positively to an individual's physical, mental, and mental health (Trice and Wood, 1958; Knetsch, 1963; Burt and Brewer, 1971; Street et al., 2007; Thomsen et al., 2018; Lackey et al., 2021; Lieberman et al., 2022). Stebbins (1992) defines serious leisure as “the systematic pursuit of an amateur, hobbyist, or volunteer activity sufficiently substantial, interesting, and fulfilling for the participant to find a career there acquiring and expressing a combination of its special skills, knowledge, and experience”. Self-actualization by developing skills and abilities, self-expression through the developing skills and knowledge, connecting with serious leisure participants, contribution to the group's success, continuity, and progress, and winning individual and social rewards provide serious leisure participants with satisfaction (Stebbins, 2001).

Research has shown that serious leisure activities directly impact positive and negative moods (Eryılmaz and Unur, 2019). It has been reported that serious leisure activities support subjective well-being and thus might prompt positive emotions in individuals (Stebbins, 2006; Heo et al., 2010). The study by Eisenberg et al. (2004) revealed a higher tendency of angry individuals to respond negatively. Additionally, serious leisure activities are reported to reduce anger tendency (Stebbins, 2006; Eryılmaz and Unur, 2019; Brymer et al., 2010). Accordingly, participants in serious leisure activities performed in the open field might have a higher tendency to respond positively than those who do not. The literature review revealed no studies on whether serious leisure activities affect the tendency to respond positively or negatively.

Based on the information provided, this study aimed to examine the positive and negative reciprocity tendencies of serious leisure participants in relation to gender, education level, age, and choice of serious leisure activities. In this context, it sought answers to the following research questions:

- ❧ Is there a significant difference between the gender of serious leisure participants and their positive and negative reciprocity tendencies?
- ❧ Is there a significant difference between the age of serious leisure participants and their positive and negative reciprocity tendencies?
- ❧ Is there a significant difference between the education level of serious leisure participants and their positive and negative reciprocity tendencies?
- ❧ Is there a significant difference between the activity chosen by serious leisure participants and their positive and negative reciprocity tendencies?

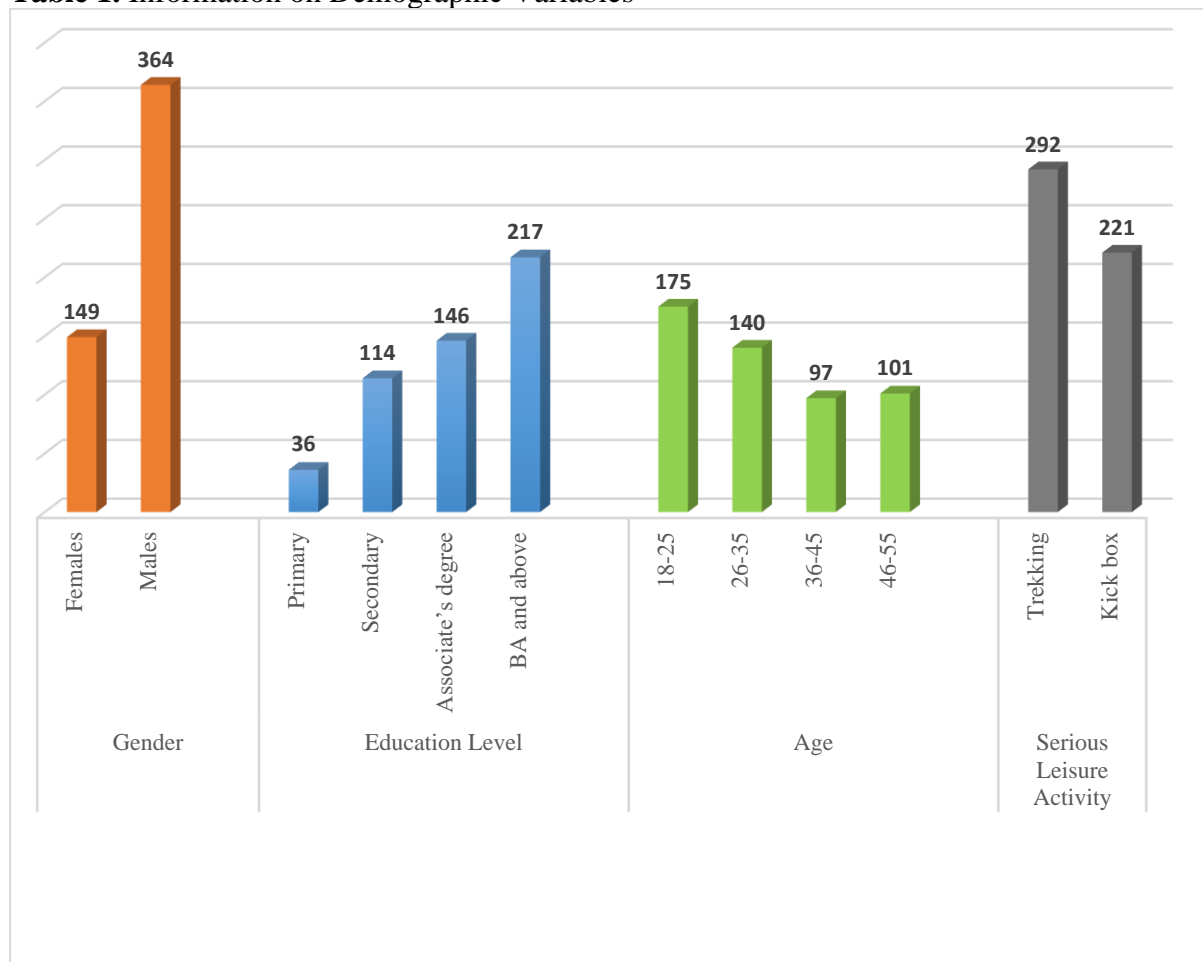
METHODS AND MATERIALS

This study adopted a descriptive survey design as one of the quantitative research designs since it aimed to determine the differences between the choice of serious leisure activity and positive and negative reciprocity attitudes in addition to such demographic variables as gender, age, and education level.

Population and Sample

The research population comprises wellness centers and nature clubs offering kickboxing and trekking activities in Çankaya, the largest central district of Ankara. The wellness centers (for kickboxing participants) and nature clubs (for trekking participants) in Çankaya were determined through Yandex Maps. The search on the application suggested 41 wellness centers with kickboxing activities and 21 nature clubs with trekking activities. Face-to-face interviews with the managers of wellness centers and nature clubs revealed the existence of 1866 active members registered in wellness centers and nature clubs. 71% of the individuals participating in nature clubs and wellness centers were males. As a result of the 95% confidence interval and 5% margin of error formula, 319 people were found to have the power to represent the population as the sample. The study adopted a random sampling method, which is a nonprobability sampling method.

Table 1. Information on Demographic Variables



The participants were 149 females (29%) and 364 males (71%) aged predominantly between 18-25 (n=175; 34,1%), with an undergraduate degree or above (n=217; 42,3%). As Table 2 illustrates, 292 were trekking (56,9%) and 221 were kickboxing participants (43,1%).

Data Collection Instruments and Procedures

This study utilized two data collection instruments: the participant form created by the researchers and the Positive and Negative Reciprocity Norm Scale (PNRNS) (Uymaz, 2019). The participant form includes items about gender, age, education level, and serious leisure activities as a response to the research questions.

The second instrument was the PNRNS, developed originally by Eisenberger et al. (2004) and adapted to Turkish by Uymaz (2019). The scale comprises 24 items in the original version and 23 items in the Turkish one (due to one item with a very low factor loading) and has two subdimensions as Negative Reciprocity (13 items) and Positive Reciprocity (10 items). In the adaptation study of the scale, Uymaz (2019) determined the Cronbach's alpha coefficient as 0.88 for the first and 0.82 for the second subdimension. The relevant values were 0.80 and 0.79 respectively in our study.

Data Analysis

The Ethics Committee of Selçuk University Faculty of Tourism granted ethics committee approval with decision number 283772 before the administration of the instruments (i.e., the participant form and PNRNS). The data were collected between 07.01.2022 and 25.03.2022 using face-to-face surveys. Of the 541 scales, 28 were miscoded. The miscoded scales were excluded, and the remaining 513 were analyzed.

The data were analyzed through Jamovi 2.2.5 Solid statistical program. A skewness-kurtosis analysis was performed to determine whether the data showed normal distribution. The values between $\pm 1,5$ indicate normal distribution (Tabachnick & Fidell, 2013) (Table 2). Accordingly, t-test and ANOVA were conducted in this study.

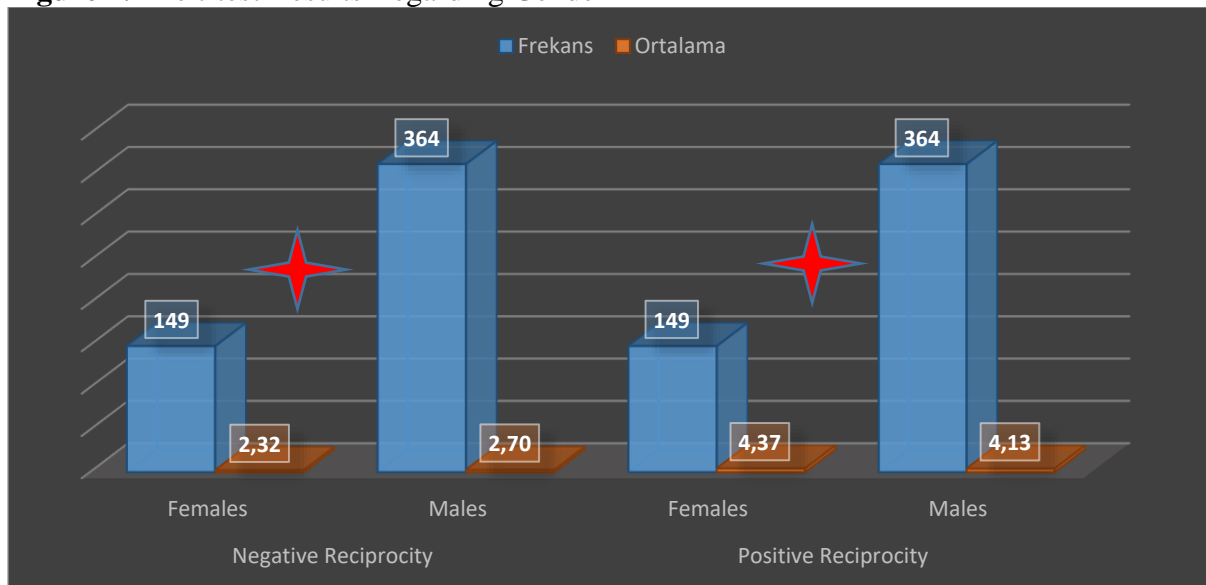
Table 2. Skewness-Kurtosis Test Results

Subdimensions		Statistic	Std. Error
Negative Reciprocity	Skewness	0,901	0,108
	Kurtosis	-0,401	0,215
Positive Reciprocity	Skewness	-1,337	0,108
	Kurtosis	0,999	0,215

FINDINGS

The t-test revealed a significant difference between gender and the positive and negative reciprocity attitudes. The mean scores of males ($x=2,70$) ($t_{(-12,51)}=p<0,05$) were significantly higher than those of females ($x=2,32$) in the negative reciprocity subdimension. However, the females had higher mean scores ($x=4,37$) ($t_{(7,42)}=p<0,05$) than males ($x=4,13$) in the positive reciprocity subdimension. This showed that gender directly impacted positive and negative reciprocity attitudes. (Figure 1).

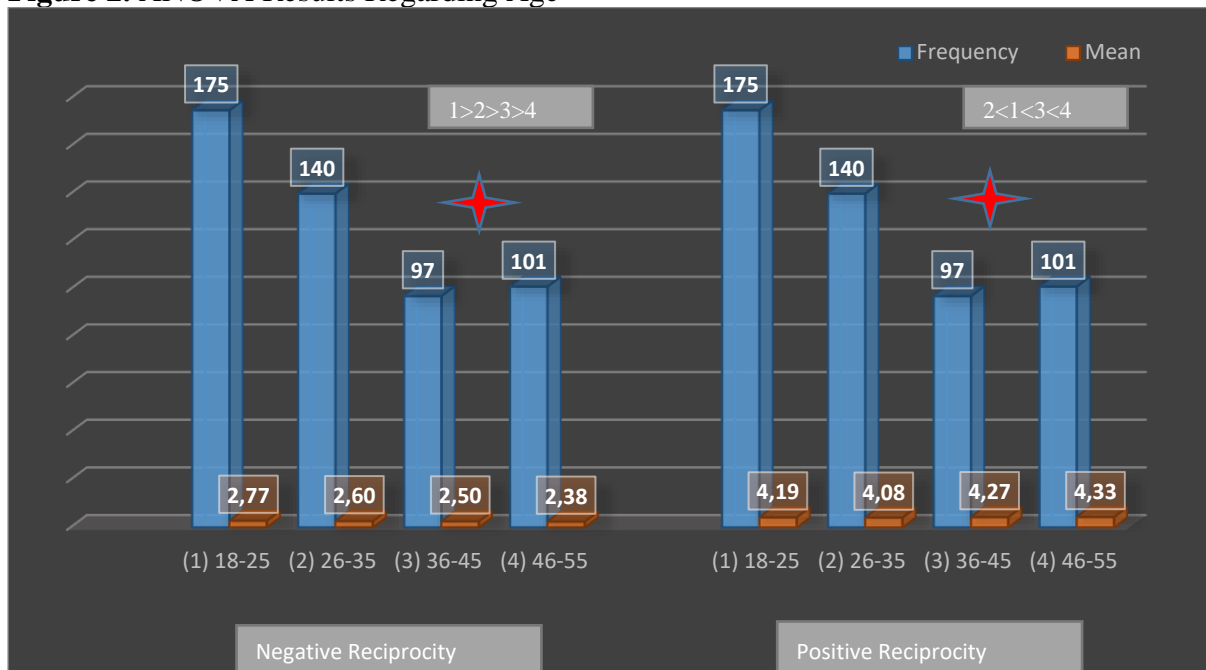
Figure 1. The t-test Results Regarding Gender



*p<0,05

Additionally, a statistically significant difference was discovered between the age and positive and negative reciprocity attitudes of the participants. The Bonferroni test indicated that negative reciprocity decreased (*p<0.05), while positive reciprocity increased in proportionate to age (*p<0.05) (Figure 2).

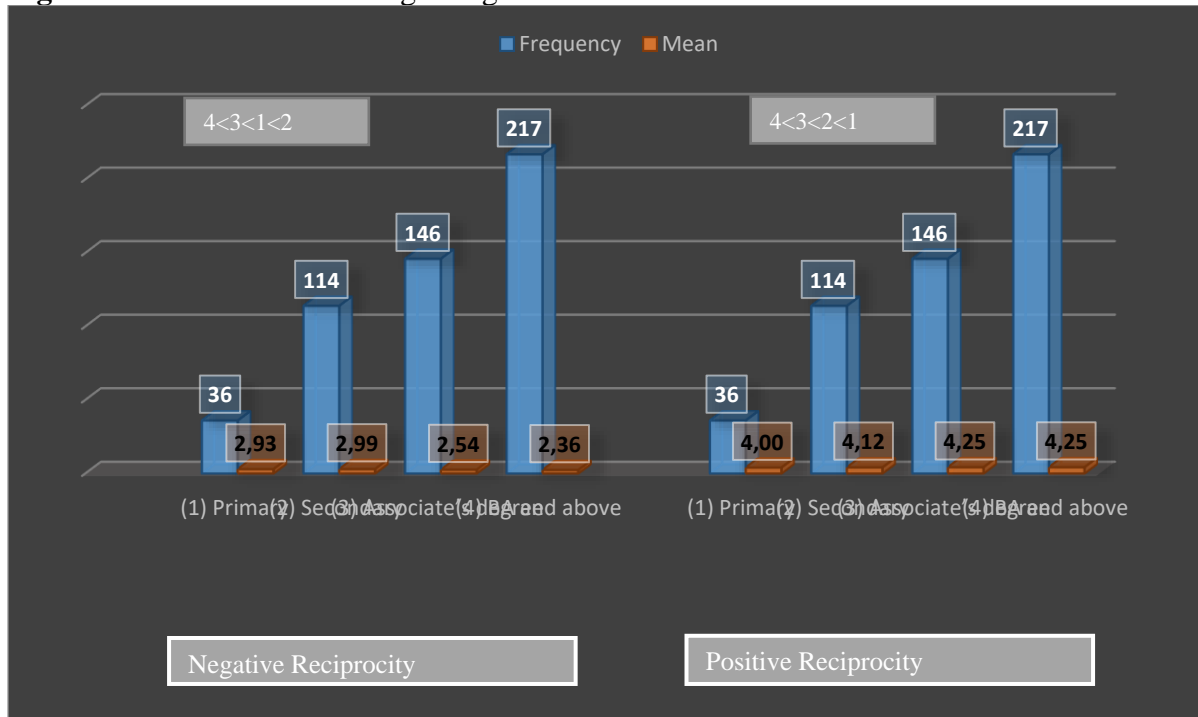
Figure 2. ANOVA Results Regarding Age



*p<0,05

The one-way ANOVA test revealed a significant difference between the education level and the positive and negative reciprocity attitudes of the participants. A post-Hoc Bonferroni test indicated a negative correlation between the education level and negative reciprocity attitudes. This means that negative reciprocity attitudes decreased as the level of education increased (*p<0,05). On the other hand, positive reciprocity attitudes increased linearly with the increasing education level (Figure 3).

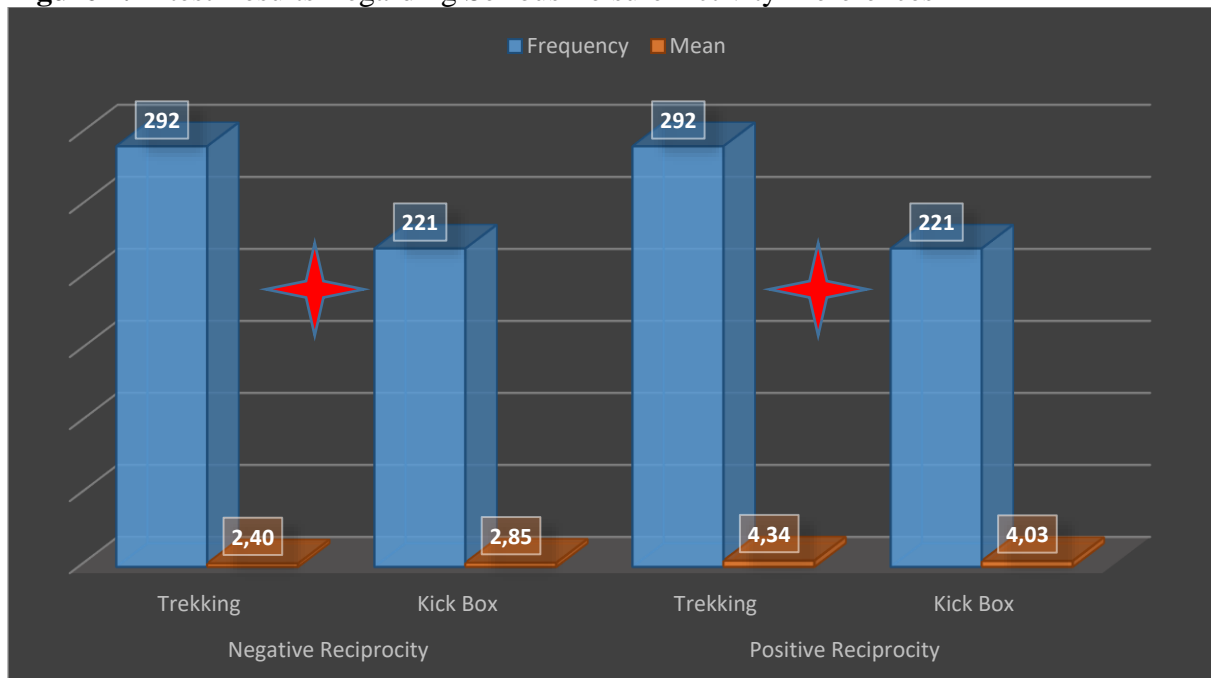
Figure 3. ANOVA Results Regarding the Education Level



*p<0,05

The results of the t-test performed between the relevant scale subdimensions and choices of serious leisure activities indicated a statistically significant difference between the kickboxing (x=2.85) (t (-5.98) =p<0.05) and trekking participants’ (x=2,40) negative reciprocity mean scores. The mean scores of trekking participants (x=4.34) (t (-0.40) =p<0.05) differed significantly from those of kickboxing participants (x=4.03) in terms of positive reciprocity attitudes. This demonstrated that preferred serious leisure activities significantly impacted positive and negative reciprocity attitudes (Figure 4).

Figure 4. T-test Results Regarding Serious Leisure Activity Preferences



*p<0,05

DISCUSSION

Research on positive and negative reciprocity mainly aims to determine the variables that affect positive or negative reciprocity (Berkowitz & Green, 1996; Crossley, 2005; Eisenberger et al., 2004; Umphress & Bingham, 2011). Following their determination, the necessary solutions are expected to be proposed according to the implementation areas and considered by lawmakers and business managers (Greco et al., 2019; Gonzalez-Mule & Aguinis, 2017). This study aimed to determine the impact of serious leisure choices on positive and negative reciprocity attitudes besides diverse demographic variables.

The study found a significant difference between gender and positive and negative reciprocity attitudes as a result of the test conducted. The mean scores of positive reciprocity were significantly higher in females, while males had higher negative reciprocity mean scores. The body of literature reveals both convergent (Dohmen et al., 2008; Karadeniz et al., 2019) and divergent findings (Chaudhuri & Gangadharan, 2003; Dittrich, 2015; Garbarino & Slonim, 2009). In an experimental study that designed for the element of trust in economic preferences, Chaudhuri and Gangadharan (2003) concluded that women had less confidence than men, resulting in a positive impact on negative reciprocity tendencies. The researchers thought this might be due to the women's tendency to save more as far as economic circumstances are concerned. In parallel with our study findings, Dohmen et al. (2008) conducted a survey study with more than twenty thousand participants in Germany about positive and negative reciprocity attitudes. The study found that females had higher reciprocity mean scores than males. This demonstrates that despite circumstances, women may have a more positive outlook than males. The researchers argued that this might stem from the personality differences in men and women, suggesting that the level of conscientiousness of women was higher than that of men and that the level of neuroticism was higher in men than in women. Personality differences, as claimed by Dohmen et al. (2008), might account for the similar finding in our study.

The analysis results regarding the age variable suggested that the mean scores of positive reciprocity attitudes increased significantly in parallel with age. Previous studies indicated that positive reciprocity attitudes increased with age (Bülbül et al., 2021; Dohmen et al., 2008; Müftüler, 2018) and that age was not a significant predictor (Chaudhuri & Gangadharan, 2003). In a study conducted on negative reciprocity attitudes in adolescence and early adulthood, Kim et al. (2001) found that negative reciprocity attitudes constantly increased from early to middle adolescence. Another study by Laursen et al. (1998) revealed a continuous increase in the intensity of negative emotions depending on age, from early adolescence to early adulthood. According to the findings of our study, the negative reciprocity tendencies of the participants in the 18-25 age group were much higher on average than in other age groups. This might be, as shown in their research, due to the continuous rise in negative thoughts in adolescence and the gradual decline in early adulthood (Kim et al., 2001; Laursen et al., 1998). Another finding regarding age was that positive reciprocity tendencies increased averagely with age. This might stem from several factors (like considering the afterlife more, weakening of the body, become more emotionally sensitive) (Bülbül et al., 2021; Dohmen, 2008; Müftüler, 2018). Additionally, maturity with age, the development of the ability to examine events from different perspectives, and life experiences might positively affect the negative reciprocity attitudes.

The test results related to the education level revealed a decline in negative reciprocity tendencies with a rise in education level. This finding was both supported (De Naeghel et al., 2021; Eisenberger et al., 2004; Torkildsen, 2012; Kovar et al., 1992) and contradicted (Konecni & Doob, 1972; Nisbett & Cohen, 1996) in earlier studies. In a study investigating the

relationship between university students and violence, Nisbett and Cohen (1996) concluded that individuals previously exposed to violence by their peers or law enforcement officers had a higher tendency to reciprocate negatively. The researchers stated this was not because there was no correlation between the education levels and negative attitudes but rather the negative experiences of the individuals. In a study that supports our findings, Eisenberger et al. (2004) concluded that the education level of individuals affected their positive and negative reciprocities. In an experimental study including individuals with high and low education levels, the researchers found that individuals with low education levels were more likely to display angrier behavior in the face of adverse situations. In our study, the underlying reason for a similar finding was the increase in individuals' high-order thinking skills and the capacity to evaluate situations from different perspectives (Caprara et al., 2015) in parallel with their education levels.

The last test regarding serious leisure activities suggested a significant difference in the mean scores of trekking and kickboxing participants concerning positive and negative reciprocity attitudes. The participants' mean scores in trekking, one of the outdoor activities, were high in positive reciprocity. However, the participants had high mean scores of negative reciprocity in kickboxing, one of the indoor activities. It was emphasized in field and experimental studies that participation in outdoor leisure activities was significantly higher than participation in indoor activities as to positive reciprocity attitudes (Bowler et al., 2010; Thompson Coon et al., 2011). In a study supporting our findings, Bielinis et al. (2019) concluded that leisure activities performed in forest areas reduced negative mood and negative thought markers and prompted positive thinking. The researchers believed this might be due to the positive effects of interaction with nature on individuals. As our findings indicated, the mean scores of negative reciprocity of individuals participating in kickboxing were higher than those of the trekking group. In their studies on sporting activities, Milovanović et al. (2020) and Wankel and Berger (1990) claimed that factors such as sudden changes in pre- and post-game anxiety and expectation states and parental and trainer pressure, which are inherent in the sportive branch, sometimes increased the stress factors of serious leisure participants and hence resulted in negative reciprocity attitudes. On the other hand, there is no winning or losing in trekking, another serious leisure activity. It is, therefore, expected to create a growing awareness of the positive impact of exposure to natural environments on mental well-being (SDC, 2008). Experimental research has shown that exposure to natural areas might improve people's health and well-being by relieving stress and mental fatigue, thereby impacting positive reciprocity (Hartig et al., 1991).

Consequently, our study concluded that there was a significant difference between the demographic variables (i.e., gender, age, and education level) and the preferred serious leisure activities (i.e., trekking and kickboxing) and their positive and negative reciprocity attitudes. There has been frequent discussion in the literature that serious leisure activities generally positively affect physical, emotional, and mental health, contributing to their rise in the long run (Stebbins, 1982; Stalp, 2006; Elkington & Stebbins, 2014; Patterson & Pegg, 2009; Lyu & Oh, 2015; Hsu & Liu, 2020). However, our study determined that the mean scores of negative reciprocity attitudes of trekking participants were lower than those of kickboxing participants. This demonstrates that those who engage in trekking have a stronger tendency to respond positively to occurrences than kickboxers do.

RESULT

To the best of our knowledge, this is the first study on the positive and negative reciprocity attitudes toward trekking and kickboxing, which are serious leisure activities. Therefore, it is expected to contribute to the literature. However, the study has several limitations. Firstly, this study was conducted using only such variables as gender, age, education level, and preferred serious leisure activity. The second limitation is that the research only a single scale was employed to reveal the current situation. The recommendations based on these situations are as follows:

☞ This study compared trekking and kickboxing activities, which are serious leisure activities, in terms of positive and negative reciprocity attitudes, along with demographic variables. The literature contains studies comparing serious leisure activities undertaken indoors and outdoors. However, studies that specifically compare activity types are rare to encounter. Hence, researchers wishing to work on the subject are assumed to obtain net results if they compare specially selected serious leisure activities and consider the participation time in addition to these activities.

☞ This study employed only a quantitative method. It is well-established that quantitative methods do not provide information about the causes but help determine between-group differences, relationships, or effects. Quantitative research is recommended to determine the causes of positive or negative reciprocity attitudes of serious leisure participants. In this way, the underlying reasons for the related phenomenon can be examined in depth and might provide more information about the subject.

☞ Recreation professionals and trainers leading serious leisure activities should diversify their activities by considering the positive and negative reciprocities of the participants. As it is known, the diversity of activities positively affects mental and physical health (Özal, 2020) and leads to an increase in positive reciprocity tendencies.

This study was carried out in the Çankaya district of Ankara, the capital of the Republic of Turkey. The results can therefore be generalized to only this population.

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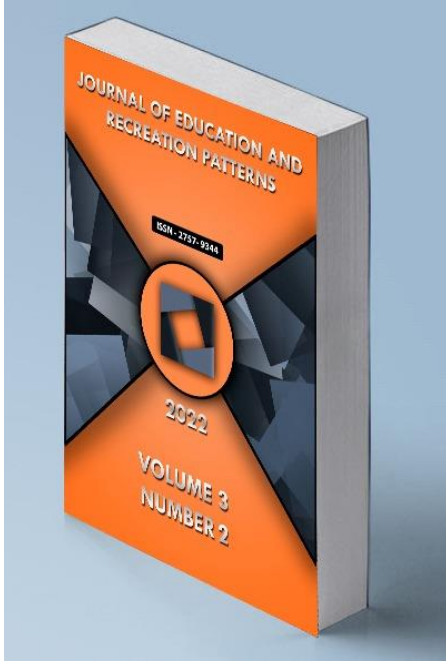
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Investigation of the Effect of Plyometric Training on Anaerobic Capacity in Skateboard Athletes

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ABSTRACT

This study examines the effect of plyometric training on anaerobic capacities in skateboarding athletes. A total of 28 skateboarding athletes, 14 in the experimental group and 14 in the control group, between the ages of 14-18 participated in the research. As the experimental and control groups continued to practice skateboarding regularly, the experimental group had an extra 8 weeks and two days of plyometric training.

Two measurements were taken before and after the workout (pre-test). The data were obtained using the SPSS26 statistical package program. Since the number of participants is 28, the Data did not show a normal distribution. Wilcoxon Test was used in the comparison of preliminary and final test in the group. The Man Whitney U test was used to compare the data between the groups and was accepted as a level of 0.05.

The result was statistically compared between the test group and the control group, and it was determined that there was no significant difference between the vertical jump and anaerobic power parameters ($p>0.05$). When we compare the intra-group data of the experimental group and the control group, there is a statistically significant difference in the mean of vertical spatter and anaerobic power ($p<0.05$).

As a result, a positive increase in vertical jump and anaerobic power parameters was determined after 8 weeks of plyometric training of the experimental group. It can be said that regularly planned and programmed 8-week plyometric training can contribute to the development of parameters such as vertical jump, anaerobic power, explosive strength in athletes.

Keywords: Plyometric Training, Explosive Strength, Skateboarding



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INTRODUCTION

Theoretical background of the study with some cross-sectional examples in the literature Skateboarding emerged as an activity started by surfers in the 1950s when surfing could not be done on the West Coast of the USA (Borden, 1998). Although it became popular among young people in the 1960s, the period when it began to be in greatest demand coincides with the advent of the polyurethane wheel and some improvements in the 1970s, when skateboards had more effective maneuverability and mobility (Forsman & Eriksson, 2001). The most effective way for a skateboarder to create self-awareness and make sense of the sport while doing this sport is a series of movements performed during the activity. Movements are acquired directly from peers or from internet videos that have become popular recently. Every movement with skateboard has a name that defines it (Woolley & Johns, 2001). To perform various combinations of skateboarding movements, both ankles must be simultaneously in plantar flexion and inversion (Ou, Chen & Yeh, 2021).

Ollie is the movement that skaters see and often use as the basis of almost all movements. It is a commonly used maneuver by skaters to jump, land, and cross over things. This maneuver is complex and needs to be fully coordinated but is essentially a jumping movement that aims to bring both the skateboard and the skateboarder to a new position vertically and horizontally. Since skateboard is not connected to the skateboarder in any way, an absolute sequence of movements is necessary to keep the skateboarder and the board together (Frederick, Determan, Whittlesey & Hamill, 2006).

To make Ollie a reality, the skateboarder slams the board on the rear axle with the right muscle force quickly to the ground and makes the tip lift up. This allows the board to rise by popping (bouncing) the tail of the board from the ground. At the same time, the skateboarder often jumps forward when using the side front of the leading leg to control and guide the orbit and spatial orientation of the board. The board and skater follow similar trajectories and eventually land on the board (Frederick et al., 2006).

Muscle strength enables a certain muscle to produce the same amount of work in a shorter time in activities such as sprint, jump, and rapid reorientation, or at the same time to produce a larger job (Peterson, Alvar, Rhea & Research, 2006). Requires the coordination of various muscle groups in order to be able to maintain rhythmic movements which are an integral part of exercise (İpekoğlu, Erdogan, Fatmanur, Colakoglu & Baltaci 2018). Jumping ability has been accepted as a basic criterion for successful performance in many sports branches (Sheppard et al., 2008). Likewise, the ability to balance is stated as an extremely necessary parameter for performing well and increasing performance (Yarim, Özcan, Yelken & Uzun 2020).

Kartal and Günay (1995) training practices based on scientific foundations in the branch of sports, the individual; While improving muscle strength, power, endurance, speed and flexibility, there is also an improvement in body structure (Civan & Uzun 2022). In order to improve the performance of the athlete, the training method called power and agility "plyometric" has been widely used since the late 70s. Plyometric training is generally defined as eccentric contraction that includes power and explosive movements, followed by explosive concentric contraction (Clark, Lucett & Kirkendall 2010). Plyometric training is a very popular form of training that allows you to do exercises involving body weight jumping using the stretch-shortening cycle (SSC) muscle movement (Markovic & Mikulic, 2010). The aim of plyometric training is to increase the strength of subsequent movements by using the natural elastic components of both the muscle and tendon and the stretching reflex (Meylan, Malatesta & Research, 2009). Plyometric training is a sport-specific, effective, time-saving and easy-to-apply training method and it has been reported that this method also improves jump

performance (De Villarreal, Suarez-Arrones, Requena, Haff, & Ferrete 2015). De Villarreal, Kellis, Kraemer, Izquierdo, & Research (2009) found that body weight plyometric studies, including a combination of counter-motion jumps, depth jumps, and squat jumps, resulted in an increase in vertical jump height of 4.7% to 15%.

Plyometric training is a training method that increases the explosive force in the performance of most exercises or sports activities by overloading isotonic exercise and causing muscle reflexes. This is the strength training used to produce faster and stronger forces during muscle contraction (Bogdanis et al., 2019). Plyometric training, which is widely used to improve the performance of athletes, is considered to be a useful training method used especially to increase lower extremity muscle strength (De Villarreal, Requena, Newton, & Sport, 2010). After plyometric training, it is desirable to quickly obtain the maximum force, especially the expected duration of movement between the eccentric (elongation) phase of muscle movement and the eccentric-concentric (shortening) phases can occur in a minimum time. Rapid deceleration-acceleration movement is the increase of speed and force, followed by the increase of explosive force (Shiroka et al., 2012).

The aim of this study is to examine the effect of 8-week plyometric training to be applied to 14-18 age group skateboard athletes together with skateboard training on anaerobic power.

METHOD AND MATERIALS

Population and Sample

This study was conducted on a total of 28 skateboarders voluntarily participating in two groups, experimental (n=14) and control (n=14), whose mean age was 16,46 years. Information was given about the scope and purpose of the study in order to motivate the subjects to use their maximal capacities. The study lasted 8 weeks and was applied as 30 minutes on 3 days of each week. While the control group continued their normal training 3 days a week, the study group athletes received plyometric training (15 minutes) 2 days a week after their normal training. Before the training, all athletes were given 10-15 minutes of stretching and warm-up movements. Before starting the studies, the pre-test of the entire group of homogeneously formed athlete students was taken, divided into 2 groups, the studies were continued, and the post-test was performed 8 weeks later.

Measurement Methods

Weight and Height Measurement

The height measurements of the athletes participating in the study were measured in centimeters with a telescopic height measurement tool. Their weights were measured with clothes such as shorts and T-shirts by using pharmacy type scale.

Vertical Jump Measurement

The distance between the height that the athlete can reach and where he/she can reach by jumping, measured using the vertical jump test (Sargent jump), was recorded in centimeters (Cicioğlu, Gökdemir, & Emre, 1996).

Determination of Anaerobic Power

The vertical jump test (Sargent Jump test), whose validity and reliability were accepted by sports scientists, was performed. Anaerobic power was determined using the Lewis formula (Garnbetta, 1989).

P=Anaerobic Power (kg/m/sec)

W=Body Weight (kg) Standard Time (sec) =4.9

D=Vertical jump

$P = \sqrt{4.9 \times (W) \times D}$

Executed Training Program

The normal training program was prepared in the light of the information obtained by reviewing the literature. The plyometric training program applied to the athletes is as follows:

- ✓ **Jumping Rope:** The athlete jumps using a double leg or single leg rope following the instructions given.
- ✓ **Double Foot Jump Without Using Arms:** The athlete is standing still, double foot next to the arms, jumps.
- ✓ **Double Foot Jump Using Arms:** Athlete standing with fixed double legs, using arms, jumping.
- ✓ **Single Foot Tab (Right and Left):** The athlete moves forward and jumps with one right or one left foot.
- ✓ **Side Jump Over Barrier:** The athlete jumps forward, right or left over a small barricade prepared beforehand.
- ✓ **Long Jump Changing Direction:** Obstacles are placed in three different directions. The obstacles are 10 m ahead of the jumping place. The Athlete's Feet are shoulder-width apart and rest in a half-squat position. The arms are supported from the back to the front and jump to the most extreme point possible. Sprint run is made to the funnel located in any direction 10 m ahead of the landing place.
- ✓ **Hexagonal Work:** Hexagon drawn with 1 m equal edge to flat ground is used. The athlete in the hexagon jumps over the lines using each equal line in turn and then back to the center.
- ✓ **Jump Over Funnel to Change Direction with Sprint:** The funnels are placed in 6 rows, 1 meter apart. In front of the first funnel, the feet are shoulder-width apart and the two feet start by jumping to the last funnel. When it jumps in the last funnel (in the air), it is returned to the starting place by making a 5-6-step sprint run in the direction of the trainer (right-left).
- ✓ **180° Return Funnel Jumps:** A straight line is drawn and 6 funnels with 2-3 steps spacing are placed on it. Standing next to the first funnel it jumps, rotates 180° in the air and falls between the funnels. Likewise, the funnels are completed by rotating 180°.
- ✓ **Pushing the Body Upward by Changing the Feet:** The athlete's left heel on the grind box with a height of 40 cm, the right foot is on the ground. It is tried to reach as high as possible with the foot on the box. While in the air, the feet are changed and the right foot is landed on the chassis with the left foot on the ground. We use both arms for height and balance.

- ✓ **Box Jump:** Athletes jump into the box in a half squat position, feet shoulder-width apart and in front of the box, with support from both arms. When Athlete are in a half squat position with our feet shoulder-width apart in front of the box, we jump to the box with support from both arms.
- ✓ **Single Foot Depth Jump:** The toes fall on the ground with one foot adjacent to the spot with a height of 50 cm and jump as high as possible using the same foot, then the same work is done in the other foot.
- ✓ **Fast Jump:** In our 50 cm spotlight, the feet stand in front of the shoulder-width box. Jumped with two feet onto the box using the arms. As soon as he/she falls on the box in the form of a half-squat, he/she jumps forward once more. He/she jumps up as high as possible, and a reverse arc movement is made in the air. The two feet fall to the ground.
- ✓ **Depth Jumping Between the Crates with the Right Foot:** An assembly is set up in which boxes are 40 cm high and 50 cm apart. Start by standing in front of the first box. The assembly is completed by jumping to the ground on the box with the right foot.
- ✓ **Depth Jumping Between the Crates with the Left Foot:** An assembly is set up in which boxes are 40 cm high and 50 cm apart. Start by standing in front of the first box. The assembly is completed by jumping to the ground on the box with the left foot.
- ✓ **Depth Jumping Between the Crates with Both Feet:** The height of the boxes is 40 cm and the distance between the two boxes is 50 cm. of boxes a setup is established. The setup is completed by jumping onto the box with both feet, over the box to the ground (Cicioğlu et al., 1996).

Data Analysis

The data obtained were obtained using the SPSS 26 statistical package program. The data did not show a normal distribution. Wilcoxon Test was used for the pre-test and post-test comparisons within the group. Man Whitney U test was used to compare the data between the groups and the significance level was accepted as 0.05.

FINDINGS

The distribution of the athletes participating in the study according to their demographic characteristics, vertical jump and anaerobic power pre-test and post-test values were examined.

Table 1. Descriptive Statistics of Experimental and Control Groups

	N	Minimum	Maximum	X	Sd
Age (years)	28	15	18	16.35	1,06
Height (cm)	28	150	182	167,75	9,06
Body weight (kg)	28	45	80	56,25	8.95
Athlete Age (years)	28	1	4	1.89	1.03

Table 1 it is seem that the average age of the participants participating in the research was 16.35 ± 1.06 years, average height 167.75 ± 9.06 cm, average body weight 56.25 ± 8.95 kg, and average sports age 1.89 ± 1.03 years.

Table 2. Statistics of Experimental Group Vertical Jump and Anaerobic Power Values

Variable	Pre-Test		Post-Test		T	P
	Mean	Sd	Mean	Sd		
Vertical Jump (cm)	35.93	± 8,60	42,57	± 9.01	-3,31	0,01 *
Anaerobic Power (watts)	75,54	±18.37	82,36	±19.67	-3,29	0,01 *

*p<.05

When Table 2 is examined, it is seen that the pretest average vertical jump values of the experimental group were 35.93 ± 8.60 cm, the vertical jump posttest average was 42.57 ± 9.01, and there was a significant difference between the vertical jump pretest and posttest data (p<0.05). In addition, it was determined that the average anaerobic power pretest was 75.54 ± 18.37 watts and the average anaerobic power posttest was 82.36 ± 19.67, and there was a significant difference between the anaerobic power pretest and posttest data (p<0.05).

Table 3. Statistics of Control Group Vertical Jump and Anaerobic Power Values

Variable	Pre-Test		Post-Test		T	P
	Mean	Sd	Mean	Sd		
Vertical Jump (cm)	35.64	± 10,55	37,43	± 10.37	-3,28	0,01 *
Anaerobic Power (watts)	73,01	±73.01	74,85	±15.25	-3,18	0,01 *

*p<.05

When Table 3 is examined, the mean vertical jump values of the control group were found to be 35.64 ± 10.55 cm and the mean vertical jump post-test was found to be 37.43 ± 10.37. There was a significant difference between the vertical jump pretest and post-test data (p<0.05). The mean anaerobic power pre-test was 73.01 ± 15.64 watts and the mean anaerobic power post-test was 74.85 ± 15.25 watts. It is seen that there is a significant difference between anaerobic power pre-test and post-test data (p<0.05).

Table 4. Comparison of Pre-Test Values of Experimental and Control Groups

	Group	N	X	Sd	Min	Max	Rank Avg.	Z	P
Vertical Jump	Experiment	28	35,79	± 9.44	20	55	14,86	-0.23	0,81
	Control						14,14		
Anaerobic Power	Experiment	28	74,27	± 16.79	46,72	106,25	15,43	-0,59	0,55
	Control						13,57		

In Table 4, the average of the vertical jump pre-test data of the experimental group and the control group was found to be 35.79 ± 9.44 cm. There was no statistically significant difference in vertical jump data between the experimental group and the control group (p>0.05). When we examined the anaerobic power values of the experimental and control groups, the average of the pre-test data was 74.27 ± 16.79 and there was no statistically significant difference in anaerobic power data between the experimental group and the control group (p>0.05).

Table 5. Comparison of Post-Test Values of Experimental and Control Groups

	Group	N	X	Sd	Min	Max	Rank Avg.	Z	P
Vertical Jump	Experiment	28	40,00	±9.88	22	59	16,71	-1,42	0,15
	Control						12,29		
Anaerobic Power	Experiment	28	78,60	± 17.69	46,72	106,25	16,14	-1,05	0,29
	Control						12,86		

When Table 5 is examined, the average of the experimental group and control group vertical jump post-test data was found to be $40,00 \pm 9.88$ cm. There was no statistically significant difference in vertical jump data between the experimental group and the control group ($p>0.05$). The mean of the anaerobic power post-test data of the experimental and control groups was 78.60 ± 17.69 watts. There was no statistically significant difference in vertical jump data between the experimental group and the control group ($p>0.05$)

DISCUSSION AND CONCLUSION

In this study, the effect of plyometric training on anaerobic capacity in skateboarding athletes is investigated. Age, height, weight, body mass index, vertical jump test data of the athletes participating in the research were evaluated and compared with similar studies. When the experimental group and control group data were compared statistically between the groups, it was determined that there was no significant difference. It is seen that there is a positive increase in vertical jump values after 8 weeks of branch-specific training performed by the control group. After the additional 8 weeks of plyometric training performed by the experimental group, an increase in vertical jump performance was observed, and accordingly, an increase in anaerobic power values was detected.

Cicioğlu et al. (1996) conducted 8-week plyometric training on 32 male basketball players between the ages of 14-18 in their study. As a result of the 8-week training, a positive increase was found in the vertical jump parameter of the experimental group. It can be said that this study is like our study.

Fischetti et al. (2018) examined the effects of plyometric training program on the speed and explosive power of the lower limbs in young athletes; It has been stated that eight weeks of plyometric training in addition to the standard athletic program improves the speed and explosive power of the lower limbs in young athletes.

Kim, Rhi, Kim & Chung (2022) examined the effects of plyometric training on physical fitness and muscle damage in baseball players. 21 high school baseball players participated in plyometric training for 3 days a week for a total of 8 weeks and the control group only participated in normal baseball skill training without plyometric training. While there was no difference between the groups after 8 weeks of training, it was observed that physical fitness such as maximum power, agility and power developed positively ($p<0.05$).

Hammami et al. (2020) examined the physical performance responses of young male handball players to plyometric training; It was stated that there was an increase in the vertical jump values of the handball players. The vertical jump results of this study are similar to our results.

In a study by Meszler and Vaczi (2019); the effects of short-term in-season plyometric training in adolescent female basketball players were investigated. As a result of the study in which an additional 7-week plyometric training program evaluated lower extremity strength, balance, agility and jump performance, it was stated that high-intensity plyometric trainings performed during the season did not improve the measured variables other than knee extensor strength.

Ateş and Ateşoğlu (2007) examined the effect of plyometric training on the upper and lower extremity strength parameters of 16-18-year-old male football players. 10-week plyometric training was found to have a positive effect on upper and lower extremity strengths ($p < 0.05$).

Bianchi et al. (2018) examined the comparative effects of weekly single and double plyometric training on jumping, sprinting and COD abilities of elite young football players. A total of 21 subjects participated in the study in a low-intensity plyometric training group (LPG = 10) and a high-intensity plyometric training group (HPG = 11). Exercise-induced meaningful changes in performance for both LPG and HPG occurred after the training. LPG and HPG reported improvements in long jump, triple hop right, triple hop left, 10 m sprint.

In their study, Biswas and Ghosh (2022) examined the effects of various plyometric training (black plyometric training, aqua plyometric training, and weighted vest aqua-plyometric training) on the anaerobic power of 48 school athletes. As a result of the study, it was found that different plyometric training groups improved significantly in anaerobic strength compared to the control group ($p < 0.05$).

In the study conducted by Uzun and Eriş (2021), they investigated the effect of plyometric training on bio-motor characteristics in male Badminton players aged 14-17 years. Plyometric training was applied to the experimental group together with badminton training. They continued the control group with a normal training program. As a result of their study, they observed a significant improvement between 30 meters speed, T-agility test, horizontal jump, vertical jump, balance, back and leg strengths.

Brown, Mayhew & Boleach (1986) found significant increases in students' vertical jump performance as a result of their study to investigate the effects of plyometric training on vertical jump performance. This study supports our study by showing parallelism with our study.

In the study conducted by Hosseini Kakhak (2022) on tennis players aged 11-14, two types of plyometric and elastic band resistance training programs were applied. There was no difference between the groups after 6 weeks of training. However, it was observed that it significantly increased agility, muscle strength, anaerobic power, explosive power and tennis performance after training ($p < 0.05$).

Bogdanis et al. (2019) in a study conducted by; the effect of plyometric training on jumping, running and changing direction speed in child female athletes was investigated. 10 m and 20 m sprint, 5+5 m and 10+10 m COD tests of athletes, one foot and two-foot counter motion jump (CMJ), fall jump (DJ), squat jump (SJ) and standing long jump (SLJ) test data received. As a result of 8 weeks of plyometric training, it was determined that there was a significant difference between the test data of the two-legged CMJ of the experimental group and the control group.

Ramirez-Campillo et al. (2020) in their study examining the sequencing effects of plyometric training applied before or after regular soccer training on measures of physical fitness in young players, it was revealed that when combined with regular football training,

plyometric training was effective in improving physical fitness measurements in young male football players. More specifically, it has been reported to have a greater effect on physical fitness if plyometric training is performed before soccer-specific training.

Diallo, Dore, Duche & Van Praagh (2001) found significant increases in the vertical jump, vertical jump in motion, repetitive bounce and long jump values of the experimental group as a result of their study to investigate the effects of plyometric training on jump performance. This study supports our study by showing parallelism with our study.

Jlid et al. (2019) examined vertical jump performance, change of direction performance and dynamic posture control of multi-directional plyometric training in young footballers; It is stated that the inclusion of versatile plyometric trainings in the in-season period of young male football players improves the vertical jump height, agility and balance performance of the athletes. The jump performance of this study is like our study.

In conclusion, it can be said that regular and scheduled 8-week plyometric training will contribute to the development of parameters such as vertical jump, anaerobic power, and explosive force in athletes. This development would have a positive effect on the performance of the athlete. Especially in branches where jumping is prominent, this type of work can be an important factor in achieving success.

Limitations and Recommendations

This research, it was limited to a total of 28 skateboarding athletes, 14 in the experimental group and 14 in the control group, between the ages of 14-18 and plyometric training for 8 weeks and 3 days a week. It is thought that by increasing the number of participants, conducting studies investigating the effects of plyometric trainings with different intensity in different age, gender and sports branches will contribute to the science of sports.

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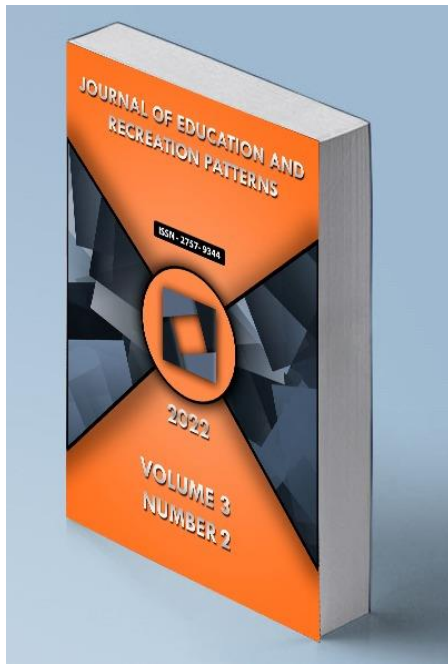
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Promoting Educational Outcomes Through Openness to Diversity: An Exploration of Sport and Physical Activity

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ABSTRACT

Research in higher education has emphasized the importance of diversity by demonstrating that students' exposure to diversity can support positive academic outcomes. Still, little attention has focused on the role of sport and recreation in promoting students' inclusive thought patterns. This study analyzed the influence of sport spectatorship, physical activity participation, and team identification on college students' (N=140) openness to diversity and academic outcomes. The results indicated that sport and recreational activity had a significant negative effect on students' openness to diversity ($\beta = -.20, p < .05$). Additionally, team identification was shown to have a significant negative effect on students' academic outcomes ($\beta = -.25, p < .01$). This study strived to provide insight into diversity efforts, demonstrating that sport and physical activity may serve as tools to assist in fostering inclusive excellence.

Keywords: Academic Outcome, College Students, Openness to Diversity, Physical Activity, Team Identification



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INTRODUCTION

Exposure to diverse individuals and ideas is an important component of college students' learning and development (e.g., Gurin, 1999; Hurtado, 2007; Hurtado et al., 1999; Seifert et al., 2010; Smith, 1997). Diversity, broadly, refers to the presence of human differences between members of a dyad or group (Cunningham, 2019). Importantly, diversity and organizational behavior literature highlights that these differences can hold social meaning and can be either objective or subjective in nature (see, for a review, Cunningham, 2019). Group members can be diverse with respect to many factors, including gender and gender expression, race, ethnicity, age, level of education, sexual orientation, (dis)ability, and socioeconomic status, among others. In the context of education, interactions with diverse populations can promote concrete outcomes, including student retention and grade point average (GPA; Bowman, 2009, 2010, 2014; Gurin et al., 2002; Kilgo et al., 2015; Pascarella et al., 1996; Whitt et al., 2001). Openness to diversity has been shown to be influenced by students' participation in collaborative and constructivist classroom settings (Alt, 2017; Loes et al., 2018). It is vital that students have "exposure to diversity through the curriculum and interacting with diverse others" (Goodman & Bowman, 2014, p. 42). As such, most institutions of higher education incorporate commitments to diversity and inclusion in their mission statements to prepare students to take part in an increasingly globalized society (Denson & Bowman, 2013; Gurin et al., 2002).

Given that experiencing many forms of diversity can promote positive outcomes for students (Bowman, 2009, 2010, 2014; Gurin et al., 2002; Kilgo et al., 2015; Pascarella et al., 1996; Whitt et al., 2001), studies have sought to explore developmental processes for creating inclusive and welcoming educational environments. For instance, recent works have examined determinants affecting students' openness to diversity (e.g., students' participation in collaborative and constructivist learning) as a starting point for inclusive education (Alt, 2017; Loes et al., 2018). Goodman and Bowman (2014) stress the importance of consistent exposure to diverse populations and ideas throughout the curriculum to promote students' overall openness to diversity in other settings. As such, many higher education institutions include commitments to diversity and inclusion in their mission statements to prepare students for an increasingly globalized society (Denson & Bowman, 2013; Gurin et al., 2002).

On many campuses, physical activity spaces (e.g., fitness centers) and sport (e.g., intramural competitions) serve social purposes, beyond simple health promotion. Indeed, numerous studies have demonstrated that sport and physical activity can assist in building inclusive communities (Cunningham, 2019; Harrolle & Trail, 2007; Kim et al., 2020; Lee & Funk, 2011; Stodolska & Alexandris, 2004). Students' participation in campus recreation sports has also been shown to increase academic outcomes (e.g., Bullon et al., 2017; Mayers et al., 2017; NIRSA, 2004; Vasold et al., 2019). Sung et al. (2015) study explored how students' identification with a college sports team was shown to foster their academic outcomes, with their sense of belonging acting as a mediator. Hence, questions arise about the role of sport and physical activity (both participating and watching) in promoting students' openness to diversity and whether the increased openness to diversity may lead to increased academic outcomes. Therefore, this study aims to fill in the gap in the literature by analyzing whether students' identification with their college sports team and participation in physical activities positively affect their openness to diversity and whether the increased openness to diversity of students positively impacts their academic outcome (GPA).

LITERATURE REVIEW

Team Identification

Team identification is a widely used framework when examining sport spectators' behaviors (see Lock & Heere, 2017). According to Wann and James (2019), team identification can be defined as "the extent to which a fan feels psychologically connected to a team" (p. 4). Early studies that examined team identification were conducted by Brill (1929) and Griffith (1938). Yet, most recent studies adopt the team identification theory developed by Wann and Branscombe's (1993) foundational study. Although there appear to be differing opinions regarding which theory the team identification theory is grounded upon, the most commonly utilized theory is the social identity theory by Tajfel and Turner (1979). Social identity theory can be defined as "that part of an individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel & Turner, 1979, p.63). The ample number of studies that utilized the team identification theory found a causal relationship between sports fans' identification with their teams and their behaviors, such as purchasing tickets and merchandise (Kwon et al., 2007; Lee & Ferreira, 2011; Wann et al., 2004), and spreading positive word of mouth (Swanson et al., 2003).

Openness to Diversity and Challenges

Pascarella and his colleagues (1997), define openness to diversity and challenges (ODC) as "orientation toward enjoyment from being intellectually challenged by different ideas, values, and perspectives as well as an appreciation of racial, cultural, and value diversity" (p. 179). More generally, ODC was defined by Bowman (2014) as "a psychological proclivity that manifests itself through a variety of emotions, attitudes, behaviors, and reactions to experiences" (p. 278). ODC has been treated as one's characteristic orientation that may lead to students' various college experience outcomes (Astin, 1991). Yet, as modern society is becoming increasingly diverse and global, higher education institutions have started to pursue ODC as one of the desired outcomes for the students to prepare this population to become productive members of society (Alt, 2017; Bowman, 2014). Meanwhile, a limited amount of work has been done to analyze the effect of students' participation in sports (e.g., participation in varsity athletics) on predicting students' ODC development and found both significant and non-significant causal relationships between the two concepts (Pascarella et al., 1996; Whitt et al., 2001; Wolniak et al., 2001).

Sports' effect on openness to diversity

A scarcity of research has specifically analyzed the causal relationship between physical activity participation and openness to diversity. To date, most research has examined the benefits of having a diverse population in sports organizations (Cunningham, 2019; Glass et al., 2014; Spaaij et al., 2018). For instance, Glass et al. (2014) found that students are more likely to cooperate with people from diverse backgrounds and decrease their perceived social barriers when participating in an intramural sports program. However, some work in the sport-for-development subfield has begun to examine the use of sport as a tool for improving social cohesion among diverse groups. In a review of sport for development studies, Raw et al. (2021) found that initiatives designed to leverage the use of sport to improve interpersonal relations have struggled to operationalize social cohesion and often have poor managerial practices and organizational strategy due to a lack of clarity around diversity-related aims and processes. This is of particular import, given the growth of social cohesion programs from international

sports-related organizations and initiatives created due to increasing numbers of immigrants and refugees, as well as general globalization (Jenson, 2010; Richards, 2017; UN, 2015).

However, considering that rare cases of exact analysis on the causal relationship between one's sports participation and their ODC exist and how sports-for-development initiatives have been utilizing social cohesion concepts to foster one's acceptance of diversity, the question remains whether watching sports can also promote sports fans' perceived openness to diversity. For example, in Mastromartino and Zhang's (2020) review of the sports fan community, mixed results were introduced regarding how differences in fans are accepted in the English Premier League (EPL) and National Football League (NFL). While inclusive attitudes were formed in EPL club fan communities due to the organization's effort in eradicating homophobia (Cleland, 2015), homophobic and sexist articles were cited in NFL fan communities (Kian et al., 2011). Hence, although previous research mention being a fan of professional sports may contribute to accepting or none-accepting behaviors (Cleland, 2015; Kian et al., 2011), this study sought to widen the existing literature by analyzing if participating in sports, both by playing and watching, can be the predictors of one's ODC. Thus, following the previous literature, the authors developed the following research hypothesis:

RH1: Sport participation (both physical activity and sport spectatorship) will have a significant positive effect on students' openness to diversity.

Academic Outcomes

The National Intramural-Recreational Sports Association (NIRSA) emphasize that college students share how participating in campus recreation activities helped them succeed in their retention, overall success, etc. (NIRSA, 2004). Moreover, various studies analyzed the causal relationship between students' campus recreation participation and their academic outcomes to find students who participated in campus recreation showed higher GPAs (e.g., Bullon et al., 2017; Mayers et al., 2017; Vasold et al., 2019).

Although many studies have analyzed the relationship between actual sports participation and their academic outcomes, there is a paucity of studies that examined the relationship between students' participation in sports activities by watching sports games and their academic outcomes. For example, past studies have shown the role of being a fan of a college sports team to create a sense of social connectedness to students and how that connectedness affects students' academic outcomes (Beyer & Goossens, 2003; Sung et al., 2015; Walton & Cohen, 2011).

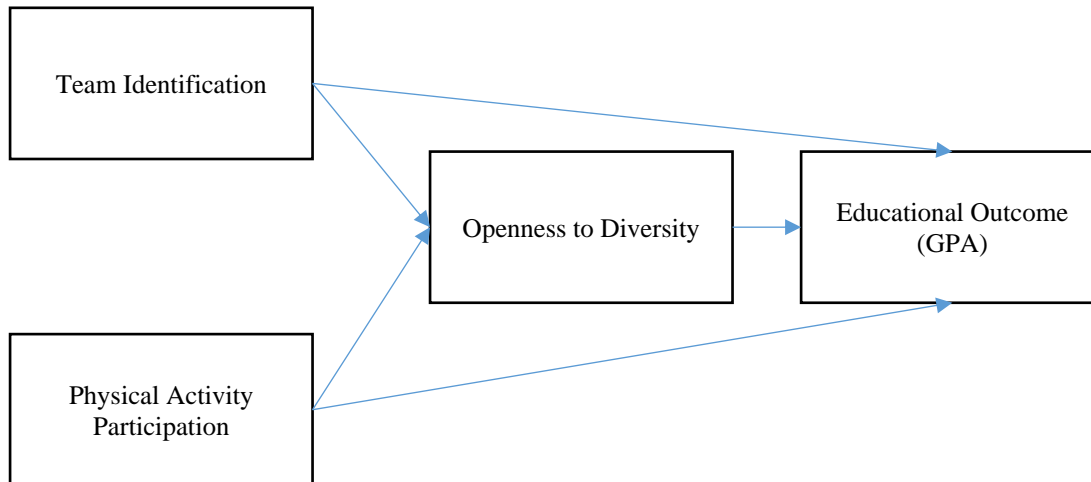
Recent studies analyzed how ODC can predict students' outcomes in college. Especially, Bowman (2014) insisted ODC is a mediating predictor of students' outcomes after their time in college. For example, Bowman (2012) found that positive ODC interaction affects first-year traditional-aged college students' diverse coursework choices in their senior year. In addition, international students seemed to be affected by ODC also as the more positive they are about ODC, the better they are adjusted to college in the U.S. (Yakunina et al., 2012). Finally, students' ODC has been shown to foster their academic and job performance (Connelly & Ones, 2010; Poropat, 2009). However, analyzing the impact of ODC is an ongoing process in academia, as previous studies also found that ODC does not intervene when analyzing one's causal relationship between diversity experience and academic outcomes (Bowman, 2012; Denson & Bowman, 2013; Denson & Chang, 2010). Hence, the additional research hypotheses are proposed based on the previous literature:

RH2: Students' openness to diversity will have a significant positive effect on students' positive educational outcomes (measured as GPA).

RH3: Students' sports participation (playing & watching) will have a significant positive indirect effect on students' educational outcomes (measured as GPA), with students' openness to diversity acting as a mediator.

Based on the research hypotheses, Figure 1 (see below) demonstrates the hypothesized research model.

Figure 1. Hypothesized research model



METHODS AND MATERIALS

The primary researcher sent emails to the faculties and staff in various majors asking for students' voluntary consent and participation in this research, including but not limited to sports management, liberal arts, statistics, etc. The recruitment email consisted of consent to participate and a link to the online survey questionnaire. Participants completed an online survey, which has an advantage over more traditional methods, including low costs, high response rate, and low chance of losing the data compared to the traditional data collection methods (McDonald & Adam, 2003).

Measurements

The survey utilized one question asking about the frequency of participation in sports activities for students. However, due to the impact of the COVID-19 pandemic at the time of data collection, students were asked to consider their activity during their "normal life" (i.e., during non-pandemic times). Therefore, the question went, "In your normal days (assuming we are not being affected by COVID-19), how often do you participate in sports activities (e.g., fitness, individual or team sports, etc.)?" This question utilized a 7-point Likert-type scale, with higher scores indicating greater frequency. Additionally, the participants were asked to self-report their grade point average (GPA) to measure their educational outcome.

James et al. (2019) Spectator Sport Identification Scale-Revised (SSIS-R) was utilized to analyze the students' sports participation by watching sports. The scale presented seven items that measured one's degree of identifying oneself as a sports fan of a certain team. For example, questions asked how important one thinks their supporting team wins, how strongly they see themselves or their friends see themselves as fans of their supporting team, etc. The SSIS-R is used in sports management academia to analyze the causal relationship between

one's team identification and their perceptions or behaviors toward rival teams (Harvard et al., 2020). The original scale, Spectator Sport Identification Scale (SSIS) (Wann & Branscombe, 1993), was used extensively in sports management academia that analyzes the causal relationship between one's team identification and social outcomes, such as the sense of community, social capital, etc. (Clopton, 2007; Clopton & Finch, 2010; Koo et al., 2015; Warner & Dixon, 2011, 2013; Warner et al., 2012). Both the original scale and revised scale (Wann & Branscombe, 1993; James et al., 2019) reliabilities showed strong internal consistency, with the original scale's Cronbach's α being .91 and the revised model having Cronbach's α of .96 (Wann & Branscombe, 1993; James et al., 2019).

Next, Pascarella et al.'s (1996) openness to diversity scale was adopted for this study. The original scale contained seven items that asked how participants feel when they are exposed to situations when participants need to engage with people of different cultures, beliefs, etc. Sample questions asked were: (a) I enjoy taking courses that challenge my beliefs and values, (b) Learning about people from different cultures is a very important part of my college education, (c) I enjoy having discussions with people whose ideas and values are different from my own, etc. Previous studies (Alt, 2017; Ellison et al., 2019; Loes et al., 2018; Han, 2017) utilized openness to diversity as an outcome variable and analyzed how this can be promoted through participants' demographic and classroom characteristics. In our study, openness to diversity is utilized as a mediating variable to analyze how this can be developed through physical activity and ultimately result in positive academic outcomes (Bowman, 2009, 2010, 2014; Gurin et al., 2002; Kilgo et al., 2015; Pascarella et al., 1996; Whitt et al., 2001). The original study (Pascarella et al., 1996) of the ODC scale showed Cronbach's Alpha coefficient as .83 and .84 when utilized in two different time sets.

Data Analysis

Data analysis was performed by using SAS (ver. 9.4). Composite scores for each variable will be utilized by aggregating the items from the same dimension. The distribution of each variable was evaluated by computing the mean, standard deviation, skewness, and kurtosis. A composite score for each scale is derived by averaging the sum of item responses with the number of items. Pearson's correlations among variables were also performed to understand how strong variables are correlated with each other. The internal consistency reliability of each scale was measured using McDonald's (1999) Omega (ω). As Cronbach's alpha relies on several assumptions (Allen & Yen, 2001), such as (a) uncorrelated item errors, (b) unidimensionality of the scale, (c) unified true score variances for all of the items, and (d) unified factor loadings for all of the items, Cho and Kim (2015) argued that these assumptions are difficult to meet in psychological test data. Omega coefficients do not have an absolute cutoff to be considered adequate or acceptable, but just like alpha coefficients, studies have been widely utilizing minimum .50 and above .75 as preferable values to consider the scale reliable (Reise, 2012; Reise et al., 2013).

Next, a path analysis (Barron & Kenny, 1986) was utilized to analyze the hypothesized research model in Figure 1. Specifically, this study followed the analytic method that Barron and Kenny (1986) suggested: (a) if the independent variables' variances account for mediating variable's variance, (b) if the mediating variable's variance account for the dependent variable's variance, and (c) if the independent variables' variances account for dependent variable's variance when (a) and (b) are controlled. Following Barron and Kenny's (1986) analysis recommendations, this study reported the significance of direct and indirect effects. The fit indices were not applicable for model fit evaluation because the proposed model was saturated with zero degrees of freedom.

Sampling

Students enrolled at large public universities in the US were recruited for this study. A total of 148 students responded to the survey, while eight responses were invalid as they were incomplete. In total, 140 responses were utilized in this study. The majority of the participants were White (76%) undergraduate students (61%). In addition, the number of male (N = 70) and female (N = 69) participants was comparable. Table 1 (below) reports the demographics of the participants.

Table 1. Participant Demographics (N = 140)

Characteristics		N	%
Gender	Male	70	49.3
	Female	69	48.6
	Non-binary	1	.7
Race	White	107	76.43
	Black	15	10.56
	Asian	12	8.57
	Other	6	4.29
Classification	Undergraduate	86	61.43
	Graduate	54	38.57

FINDINGS

First, the reliability of the scales was analyzed by utilizing McDonald's (1999) Omega (ω). Responses from our study were utilized and revealed Omega coefficients for both team identification and openness to diversity and challenges scale as .91 and .89, which meet the preferable cutoff for a reliable scale (Reise, 2012; Reise et al., 2013). Next, descriptive statistics of the variables were analyzed, wherein all study variables met the normality assumption. Descriptive statistics and bivariate correlations can be found in Table 2.

Table 2. Means, Standard Deviations (S.D.), Normality, and Correlations for Variables

Measure	M	1	2	3	4	Skewness	Kurtosis
1 Physical Activity Participation (PA)	5.01 (1.64)	-				-.378	-.94
2 Team Identification (TI)	5.26 (2.22)	.25**	-			-1.09	.40
3 Openness to Diversity and Challenges (ODC)	4.02 (.70)	-.20*	-.07	-		-1.09	1.94
4 Grade Point Average (GPA)	3.52 (.43)	-.11	-.27**	.14	-	-.97	.63

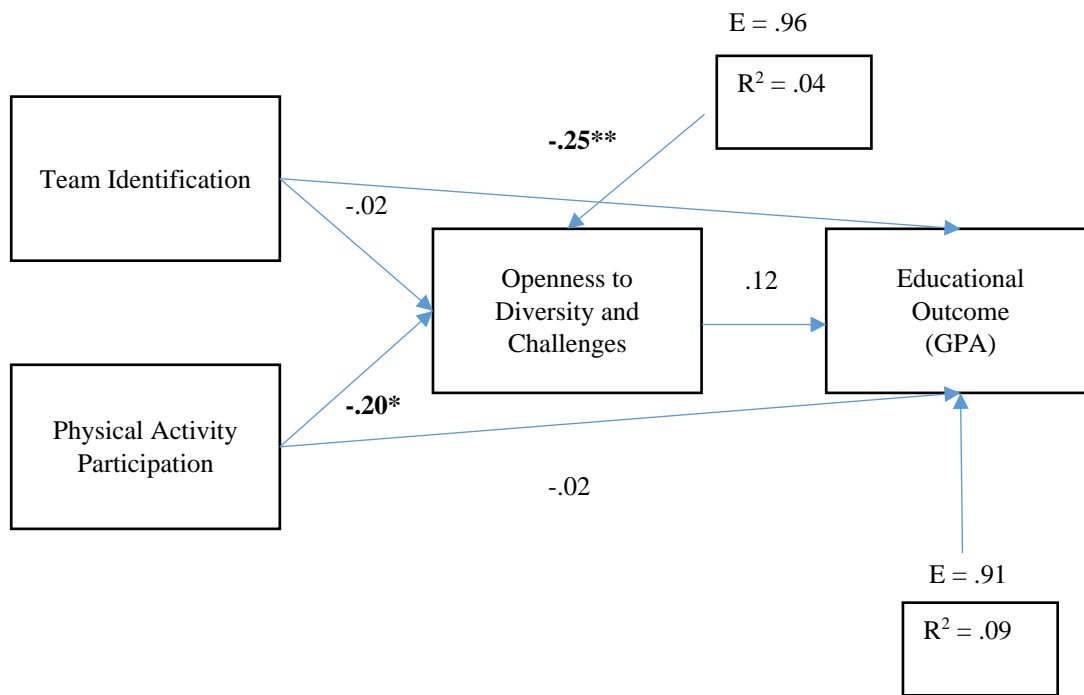
Note. * = $p < .05$, ** = $p < .01$ for all analyses (N = 140). Standard deviations appear in parenthesis below means.

Next, the student's educational outcome path model was decomposed following Baron and Kenny's (1986) suggestions (See Figure 2). The results showed that only one of the independent variables (participation) significantly affected the mediator (ODC). Also, the mediator (ODC) did not significantly affect the dependent variable (student's GPA). Hence, our results indicated that students' ODC does not act as a mediator between physical activity,

sport spectatorship and academic outcome (GPA). The goodness of fit for this model is not provided as this model utilized a saturated model with no degree of freedom.

Following our results, research hypotheses were tested. RH1 was not supported by results showing only students' PA having a significant negative effect on their ODC when TI did not have a significant causal effect on ODC. RH2 was also not supported by ODC not having a significant causal effect on students' GPA. Finally, RH3 was also not supported as TI had a significant negative indirect effect on the student's GPA when PA did not have any significant causal effects on the student's GPA. More specifically, TI significantly affected GPA (total effect = -.26), but the impact mostly came from the direct effect (direct = -.25), while the indirect effect through ODC was insignificant (indirect = -.002). PA did not impact GPA generally, with insignificant direct and indirect effects (See Table 3).

Figure 2. Student's educational outcome path model.



Note. Bold indicates statistically significant paths ($p < .05$).

Table 3. Standardized Path Coefficients

Path	Direct Effect	Indirect Effect	Total Effect
Team Identification →			
Openness to Diversity and Challenge	-.02	-	-.02
Physical Activity Participation →			
Openness to Diversity and Challenge	-.20*	-	-.20*
Team Identification → GPA	-.25**	-.002	-.26**
Physical Activity Participation → GPA	-.02	-.02	-.04
Openness to Diversity and Challenge → GPA	.12	-	.12

Note. * $p < .05$, ** $p < .01$

DISCUSSION

Our study examined how students' sports engagement, both through physical activity and sport spectatorship, affected their openness to diversity and challenge (ODC) and students' academic outcomes. Furthermore, we examined the relationship between one's ODC and an academic outcome (i.e., GPA) and tested if students' ODC act as a mediator between sports participation and their academic outcomes. Others have suggested the importance of diversity in organizations (e.g., Avery, 2011) and sports (Melton & Cunningham, 2014) to improve overall outcomes. However, to our knowledge, this was the first study to explore the relationships between students' sports experiences, their ODC, and academic outcomes (i.e., GPA).

The Impact of Students' Sports Engagement on their ODC

Among the first relationships tested in our data, we found a significant inverse relationship between students' physical activity and ODC. That is, among our respondents, those who engaged in higher levels of physical activity exhibited less open attitudes towards dissimilar others. This is at odds with other research, which has suggested the development of inclusive attitudes through participation in physical activity. For example, Glass et al. (2014) found that participating in intramural sports programs promoted one's ability to engage in diverse groups and decreased social barriers. However, others have argued that sports spaces can be exclusive in nature (see, for example, Cho & Price, 2018, Pickett & Cunningham, 2017). For instance, Cho & Price's (2018) study examined different leisure constraints among domestic and international students, finding that international students faced greater barriers in accessing sports activities on campuses due to difficulties finding peers to participate in sports activities. Pickett and Cunningham (2017) similarly argued that individuals in larger bodies faced an exclusive climate when engaging in sports activities. Together, these studies point to a homogenous and generally exclusive dominant sports culture, wherein those with minoritized identities are less likely to have opportunities to engage and benefit from sport. This is consistent with our current findings, as our study's main population was White students who have majority status on campus. In addition, those most likely to engage in sports activities were least open to diversity, again pointing to a more exclusive sports culture.

Interestingly, we found no support for a relationship between team identification and openness to diversity. This may be an effect of countervailing forces. That is, previous studies have suggested that team identification can promote one's sense of social connectedness (Beyer & Goossens, 2003; Sung et al., 2015; Walton & Cohen, 2011). As individuals interact with others (e.g., similar fans), they feel more connected and included. However, others have suggested that college sports and sports fandom can be exclusionary to certain campus community members (Harris, 1998; Palmer & Thompson, 2007; Tonts, 2005). Thus, college sports may serve as a point of connection for interacting with those already in a student's social networks (i.e., other similarly identified fans). However, this shared social connectedness does not necessarily translate to openness to dissimilar others. As diversity is being increasingly important in higher education, athletic departments should examine the role they play in promoting an inclusive campus culture. Given the impact of following college sports on one's sense of social connectedness (Beyer & Goossens, 2003; Sung et al., 2015; Walton & Cohen, 2011), it is a promising space for fostering engagement across social identity fault lines.

The Impact of ODC on Academic Outcomes

It is important to note that ODC was not related to students' academic outcomes, which was inconsistent with other existing literature (Bowman, 2014; Connelly & Ones, 2010;

Poropat, 2009). One explanation for this result may be the nature of self-report data, particularly when an issue is salient to the participant. Bowman (2014) argued that external evaluations of one's ODC seemed to have a higher relationship with academic and job performance than self-evaluation. At the time of writing, several diversity-related social issues were salient in the national news coverage (e.g., Black Lives Matter protests, hate crimes against Asian Americans and Pacific Islanders [AAPIs], disparate treatment of women at national sporting events). Because of the divisive nature of these ongoing conversations, participants may have been primed to feel they were more open to diversity (or responded in a way they perceived to be more socially acceptable). The high mean score on the ODC scale (i.e., 4 / 5) across the sample suggests participants generally viewed themselves as open to diversity. Further, this study was conducted in two predominantly white, predominantly rural states. In these areas, diversity and inclusion may be less emphasized in coursework, and students may not need to interact with diverse others in classes; thus, the relationship between ODC and academic success may be less pronounced.

The Impact of Students' Sports Engagement on their Academic Outcomes

Finally, unlike previous studies (Bullon et al., 2017; Milton et al., 2020; Hoppe et al., 2020), participation in physical activity had no (in)direct effects on one's GPA. Also, our study found contrasting results from previous studies (Beyer & Goossens, 2003; Sung et al., 2015; Walton & Cohen, 2011) by team identification showing a direct negative effect on GPA and its indirect effect not being supported. In sum, these results imply that highly identifying with college sports and engaging in physical activities may distract participants from their studies and hinder them from being open to people in different groups than their peers. These results raise caution on the overall belief that sports may act as a panacea to promote students' ODC and academic outcomes and call for more specific designs when utilizing sports to promote ODC or academic outcomes.

Practical Implications

Although studies found positive academic and social outcomes in students who were exposed to positive ODC interaction experiences (Bowman, 2012; Connelly & Ones, 2010; Poropat, 2009; Yakunina et al., 2012), our results bring up the need for investigation into appropriate and careful promotion of sports-related activities, which may promote wellbeing and openness to different people, but do not impede student success (Bowman, 2009, 2010, 2014; Gurin et al., 2002; Kilgo et al., 2015; Pascarella et al., 1996; Whitt et al., 2001). This suggestion is supported by a previous study that emphasized the importance of structuring sports management classes to prepare students to become more open to diversity (DeLuca et al., 2021).

Based on the previous studies and the results of this study, one of the suggestions is to give students opportunities to experience the benefits of partaking in sports activities with people who are different from themselves. With the sport environment being a homogenous and generally exclusive dominant sports culture, specifically in the context of the student population being predominantly White higher education institutions, this suggests the importance of letting the students experience the benefits of interacting with heterogeneous communities of students through sport and physical activities. Hence, it is recommended for sports management faculties, in cooperation with the recreation office and athletic departments, to guide students to form a group with students from different backgrounds and help students to experience the benefits of positive ODC interaction experiences. Furthermore, as students who have already formed their ingroup may not extend their relationships with students from

different backgrounds, faculties should encourage group extension and promote the benefits of a positive ODC interaction experience.

CONCLUSION

This exploratory study examined relationships between university students' sports team identification and physical activity participation with their openness to diversity and academic outcomes. Given the increasingly diverse nature of the global society, it is important to understand tools for developing an open and inclusive mindset. While we found no relationship between team identification and ODC, there was an inverse relationship between sports participation and ODC. We further examined the impact of ODC on an academic outcome (i.e., GPA), which was not significant. However, a significant, negative direct effect was observed between team identification and student GPA. Given the exploratory nature of this study, we suggest further investigation is needed to understand the complex relationships between sport, diversity, and academic achievement among students.

Limitations and Recommendations

The main limitation of this study lies in our sample's generalizability. This study asked for students' voluntary participation without any economic rewards; thus, the overall sample size was limited. Further, our participants were from universities located in states with comparatively less diverse populations. The generalizability of findings would improve with a more nationally representative sample. Finally, since this study is the first to connect individuals' physical activity participation and team identification to their ODC and academic outcomes, the utilization of exact literature was close to impossible with existent literature. Additionally, physical activity and GPA was self-reported; therefore, there is a possibility that the data is not completely reliable.

Future studies can utilize our results to investigate further how sports impact students' perception of diversity and their effect on academic outcomes. Therefore, utilizing experimental studies that include testing groups and control groups regarding the degree of participation in physical is recommended. Through this setting, one will be able to distinguish between those who participate in physical activities or follow college sports in terms of how much ODC they develop by getting involved in those activities. In addition, this setting will allow researchers to uncover if there are significant differences in results (e.g., one's perception towards ODC, improvement in one's GPA at the end of the semester from experiment participation, etc.).

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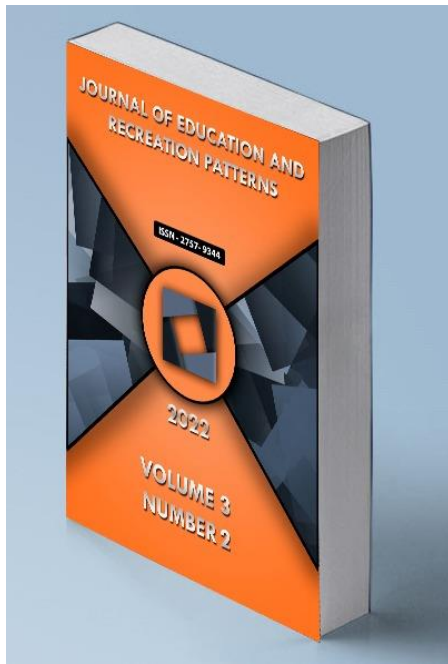
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Accessibility of Walking and Biking as Forms of Exercise in Harris County, Texas, USA

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Accessibility of Walking and Biking as Forms of Exercise in Harris County, Texas, USAJoseph Hudson¹, Wycliffe W. Njororai Simiyu²**ARTICLE INFORMATION**

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Volume: 3, No: 2**Pages:** 77-89**ABSTRACT**

The prevalence of obesity in Texas, specifically Harris County, is a growing health concern. 26.7% of Texan adults reported no leisure time activity, which is significantly higher than the national average (24.4%). This study aimed at collecting walkability and bike-ability scores for 115 zip codes covering the greater City of Houston in Harris County, Texas, USA. The walkability and bike-ability scores are objective representations of the ability one completes their daily errands. Walkscore.com was used to collect the data from 115 zip codes found inside Harris County. It ranks walkability and bike-ability on a scale of 0 to 100 depending on the availability of walking and biking infrastructure in an area. Thirty-three (28.4%) zip codes had walkability scores between 0 and 24, thirty-nine (33.6%) had scores between 25 and 49, thirty (25.9%) had scores between 50 and 69, eleven (9.5%) had scores between 70 and 89, and only two zip codes scored above 90 (1.7%). Only thirty-five counties have a reported bike-ability score. Zero (0%) are within 0-24, thirty (83.3%) are within 25 to 49, two (5.6%) are within 50 to 69, three (8.33%) are within 70 to 89, and zero (0%) are within 90-100. The majority (72, 62.1%) required vehicle transportation while only thirteen (11.2%) had walkability scores over 70. Only 5 (4.3%) of the total zip codes within Harris County have adequate biking infrastructure.

Keywords: Built Environment, Healthy Lifestyles, New Urbanism, Physical Activity, Walkability Score

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INTRODUCTION

Public health in most developed countries has seen a significant downturn in recent decades with a steady increase in body mass index (BMI) and subsequent increases in both morbid obesity and cardiovascular disease (Sadiva & Khan, 2018; Sturm & Hattori, 2012). These changes to public wellness are seen across the world, with the United States having an extreme increase in those with clinically severe, or morbid, obesity. People with morbid obesity are proven to have elevated rates of cardiac arrest, and thus at an increased risk of sudden death at young ages (Duflou et al., 2004; Sadiva & Khan, 2018). This widespread change in health is largely preventable with an appropriate amount of moderate physical activity, such as walking or biking.

General physical activity is one of the recommended methods to improve general health and aid in the prevention of chronic diseases such as cardiovascular disease (Anderson & Durstein, 2019; Lee & Buchner, 2008). The activity recommended for adults is a minimum of 30 minutes of moderate-intensity exercise, in at least 10-minute intervals, 5 days a week. Walking is the most commonly reported moderate-intensity physical activity by adults and teenagers in the USA (Collins & Fulton, 2015; Rodriguez-Hernandez & Wadsworth, 2019). Walking, though commonly viewed as a non-vigorous exercise, when maintained at a brisk pace can generate energy expenditures up to those seen when jogging (Das Gupta et al., 2019; Greiwe & Kohrt, 2000; Kipp et al., 2018). Conversely, health education is similarly important in promoting healthy lifestyles. Those more knowledgeable about the benefits of physical activity are less likely to be physically inactive (Chen & Gu, 2018).

However, physical inactivity and subsequent obesity are growing health concerns in Texas, USA as well as the whole world. According to the Center for Disease Control, more than 60% of adults do not engage in the recommended 30 minutes of exercise a day. Furthermore, physical inactivity varies greatly among USA states and territories. Inactivity levels range from 17.3% of adults in Colorado to 47.7% in Puerto Rico. Texas specifically has an above-average inactivity rate of 27.9% (CDC, 2020). Marginalized communities in low-income regions are most at risk for physical inactivity due to differences in social environment and local infrastructure compared to high-income regions (Bauman, 2012; Josey & Moore, 2018). Overall, these issues can be fixed by bringing attention to the large disparities in access to healthy foods, public transportation, lack of physical activity facilities, job strain, higher prevalence of fast-food restaurants and high-calorie foods with low nutritional value at their supermarkets (Bauman, 2012; Institute of medicine, 1970; Josey & Moore, 2018). The local environment can impact physical activity in children as well. Areas with higher walkability scores, access to recreation facilities, and more friendly land use have higher levels of activity among adolescents (Bauman, 2012; Josey & Moore, 2018). Studies show that the physical and social environments in which we live can make it difficult to obtain optimal levels of activity and maintain normal weight (Ahlport, et al., 2008; Ewing et al., 2003; Gordon-Larsen et al., 2000). The lack of appropriate physical activity-friendly environments predisposes communities to depend on automobiles as a predominant means of transportation for most families, which results in even more sedentary behavior (Ewing et al., 2003).

Recent studies on physical activity have focused on promoting walking as a health-enhancing endeavor. In 2019 the proportion of Texas adults who reported no participation in the leisure-time activity (26.7%) was significantly higher than the national average (24.4%). Similarly, the overall prevalence of obesity among Texans (34.8%) is significantly greater than the national obesity rate (30.9%) (CDC, 2019). According to the Center for Disease Control, adults are not the only group suffering from obesity. The obesity rate among high school students is around 15.5% (CDC, 2019). Although the obesity rate among adolescents is lower

than the national average for adults, the prevalence of early-life unhealthy habits is concerning for the future of public health.

If unhealthy habits begin at such a young age, chronic diseases are much more likely to occur later in life. Those with obesity are at an increased risk for cardiovascular disease and diabetes, but many other chronic diseases stem from obesity as well. Obese adults have higher rates of fatty liver disease, cancer, sleep apnea, and many others (Demakakos et al., 2010; Kyrou, 2018; Pi-Sunyer, 2009). All these chronic diseases are strongly related to overall BMI and fat distribution. As BMI increases over 29.9, the mortality risk increases even further, which overall poses more risk to men than women (Kyrou, 2018). Furthermore, according to the Center for Disease Control, the prevalence of obesity in the United States was 42.4% between 2017-2018. Of this percentage, 40.3% of adult men and 39.7% of adult women were considered obese (CDC, 2020). Men have higher mortality at a higher BMI than women, and also have a higher obesity rate than women, posing an increased risk for premature death. However, with proper intervention, these health conditions can be managed, and the metrics improved. Promoting physical activity from a young age can moderately improve adult activity levels, nonetheless, promotion of an active lifestyle must continue into adulthood if the risk of health-related disease is to truly be mitigated (Hallal et al., 2006).

Local governments must promote healthy lifestyles and provide access to exercise for their citizens. Policy designated by local municipalities can have a big impact on the health of cities around the nation, and specifically, Texas. In Houston specifically, socio-economically disadvantaged communities, as well as minority groups are most likely to be affected (Health behaviors n.d). To reduce the occurrence of inactivity, city planners can aid in the determination of street design, public transportation, the establishment of walking and biking paths for citizens, and the creation of recreational facilities (Iravani & Rao, 2019; Librett et al., 2003). Proper funding and legislation can have a significant impact on local communities. Having available parks and recreation facilities within one mile of home, or an increase in investment of \$10 per resident can significantly increase physical activity (Godbey & Mowen, 2010). Due to trends in increasing obesity among the general population, exercise accessibility may be the most important factor in increasing overall public health. To actively promote exercise, infrastructure must be in place to support ease of movement as well as specialized physical activities. Studies have shown that urban design promotes overall community wellness. Community-scale Street planning can increase the overall physical activity of a community when used in conjunction with local policy (Heath et al., 2006; Irvani & Rao, 2019).

This study researched the walkability and bike-ability of Houston, Texas, and the surrounding cities within Harris County using the different zip codes. Harris County was chosen specifically as it is the largest county in Texas and the 3rd largest county in the United States by population (World Population Review, n.d). Walkability and bike-ability are valid measures in determining the overall physical activity of a locality. Assessing walkability and bike-ability scores and comparing them from one area to the next, allows one to get the scope of physical activity profile of the community in question. The scores for each zip code were derived from www.walkscore.com, an online resource that promotes walking and biking as a healthy lifestyle in urban communities. This study analyzes the varying walk and biking scores for 115 zip codes selected from the greater Houston area in Harris County, Texas, USA.

METHODS AND MATERIALS

Harris County zip codes were abstracted from www.walkscore.com and the City of Houston was used as the framework for data collection and analysis. Walk Score was developed by Front Seat Management (www.frontseat.org), a software development company based in Seattle, WA, which focuses on software with civic applications. Walk Score uses publicly available data to assign a score to a location based on the distance to and variety of nearby commercial and public frequently visited facilities. Data sources used by Walk Score include Google, Education.com, Open Street Map, and Localize. Facilities are divided into five categories: educational (e.g., schools), retail (e.g., grocery, drug, convenience, and bookstores), food (e.g., restaurants), recreational (e.g., parks and gyms), and entertainment (e.g., movie theaters).

The Walk Score algorithm calculates the distance to the closest of each of the five facilities, using straight-line distances, and calculates a linear combination of these distances weighted both by facility type priority and a distance decay function (Duncan et al., 2011). The Walk Score data has previously been validated by Carr et al., (2010), Carr et al., (2011) and Duncan et al., (2011) as viable for establishing the physical activity profile of a community. The walk score helps one to find a walkable place to live depending on preference on accessing certain utilities including physical activity, grocery stores, supermarkets, restaurants, apartments, etc. The Walk Score is a number between 0 and 100 that measures the walkability of any address. The scoring between 90 and 100 is a walker's/biking paradise where daily errands do not require a car; 70 to 89, is very walkable/bike-able as most errands can be accomplished on foot or bike; 50 to 69 is somewhat walkable/bike-able as some errands can be accomplished on foot/bike; 25 to 49 is car-dependent as most errands require a car and 0 to 24 is car-dependent as almost all errands require using a car. The data were descriptively analyzed and presented in figures.

Bike score, like the walk score, analyzes the infrastructure in place to allow for safe and accessible travel by bike. The bike score measures bike lanes road connectivity, trails, hills, and distance to local destinations. While the walk scores are determined based on time, the bike scores are based on distance. If any of the five local amenities stated previously are outside of one Kilometer from the origin marker, then they are not calculated into the bike score. In comparison, the walk scores are only calculated by these locations that are within a 30-minute walk. Each of the different measures is graded differently. For example, bike paths, bike lanes, and shared infrastructure have different weighted scores in descending order, respectively. The "hilliness" of an area is only measured within 200 meters of the origin and depending on the grade of the slope a different score is given.

The bike score is graded on the same scaling as the walk score. 90-100 is the "Biker's Paradise" where all daily errands can be accomplished on a bike. A score of 70-89 is "Very Bikeable" where biking is convenient for most trips. 50-69 is "Bikeable" where there is some bike infrastructure, and 0-49 is "Somewhat Bikeable" where there is minimal bike infrastructure. However, unlike the walk score, not every location has a calculated bike score, thus the data related to biking is less inclusive than the walk score.

Sampling

Greater Houston in Harris County, Texas was the setting of the study. Harris County is in Texas, USA. As of the 2020 census, the population was 4,731,145, making it the most populous county in Texas and the third most populous county in the United States of America. Its county seat is Houston, the largest city in Texas and fourth largest city in the United States (<https://www.visithoustontexas.com/about-houston/nearby-towns-and-cities/harris-county/>).

There are 138 Zip Codes for the City of Houston. Out of the 138 Zip Codes for the City of Houston, 115 (83 percent) of them that fall under Harris County with pertinent walkability scores, were purposely selected for the study.

FINDINGS

The findings for walkability and bike-ability levels in Harris County, Texas are presented below. Figures one and two represent the findings on walkability and bike-ability in the selected zip codes within Harris County respectively.

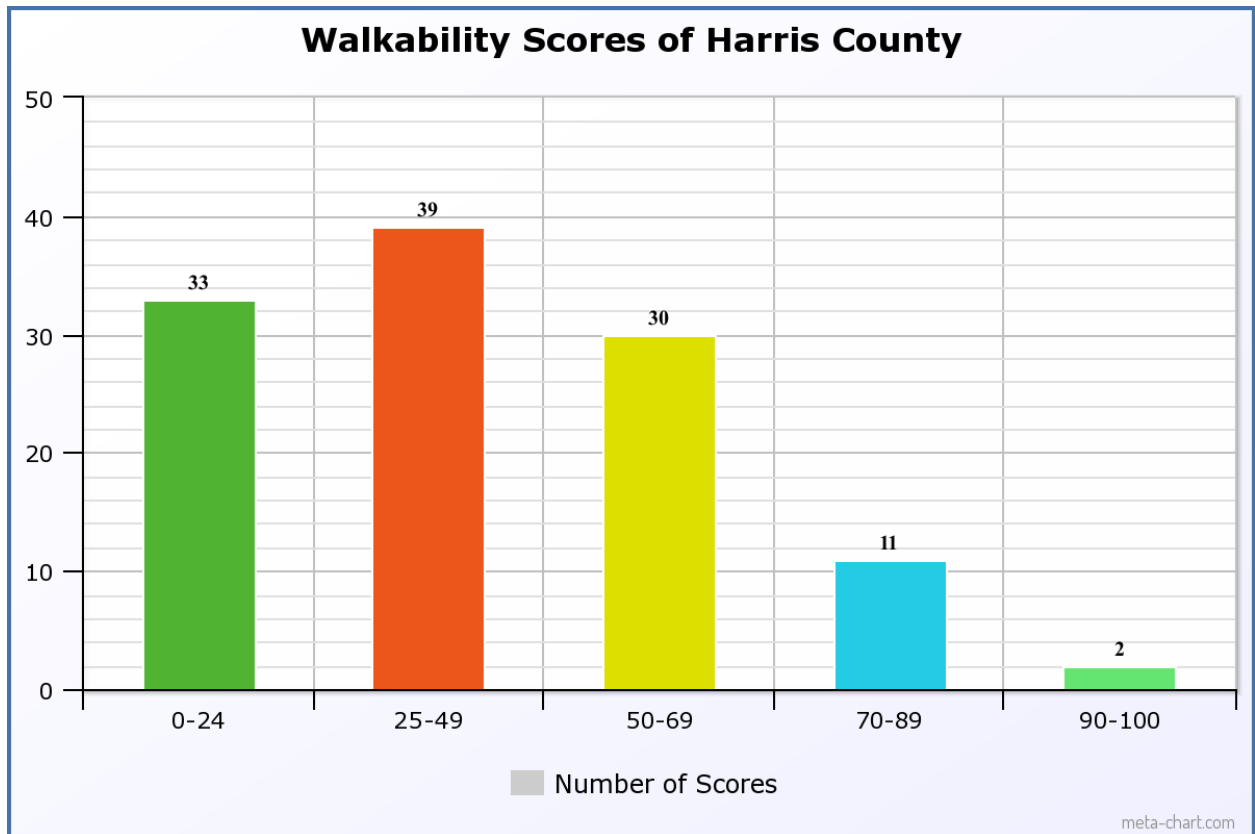


Figure 1. Frequency of occurrence of Walkability scores (Y-axis), separated into ranges of 0-24, 25-49, 50-69, 70-89, and 90-100

As data in figure one shows, the 115 zip codes located within Harris County, were, on average, dependent on vehicle transport. The data shows that thirty-three (28.4%) zip codes had walkability scores between 0 and 24, thirty-nine (33.6%) had scores between 25 and 49, thirty (25.9%) had scores between 50 and 69, eleven (9.5%) had scores between 70 and 89, and only two zip codes scored above 90 (1.7%) on the walkability score.

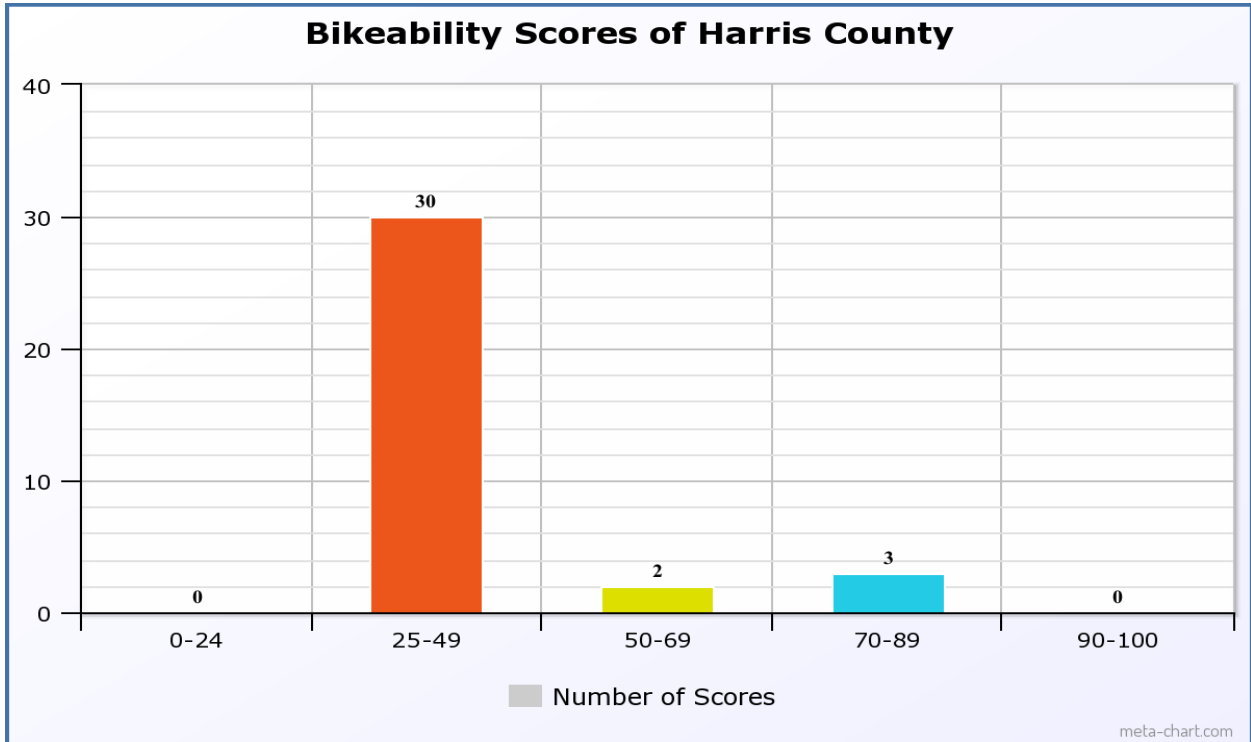


Figure 2. Frequency of occurrence of the 35 reported Bike-ability scores (Y-axis), separated into ranges of 0-24, 25-49, 50-69, 70-89, and 90-100.

Only 35 zip codes have reported bike-ability scores. Figure 2 represents the 35 reported bike-ability scores. These values ranged from twenty-five to eighty-nine, where on average, the zip codes with reported scores were highly car-dependent with minimal biking infrastructure. The data shows that zero (0%) of the reported zip codes range between 0-24, thirty (85.7%) range between 25-49, two (5.7%) range between 50-69, and three (8.6%) range between 70-89, and finally zero (0%) are between 90-100.

According to figure 2, twenty-three of the thirty-five (66%) reported bike-ability values were higher than the walkability score. 7 zip codes of those recorded had walkability scores of 0-2. Including 77049, 77082, 77044, 77032, 77377, 77375, and 77336. Each of these zip codes surrounds the northernmost area of Houston city limits which may impact development and accessibility. Contrarily, there are only two reported scores over 90: 77051 (97), and 77202 (94). 77202 is related to the center of downtown Houston, while 77051 is several miles south, in a well-developed region. The thirty-five zip codes with reported bike-ability scores had a much smaller range in comparison to walkability, with thirty (83%) scoring less than 50, which is very car-dependent.

DISCUSSION AND RESULTS

Regarding walkability, the majority (72, 62.1%) of zip codes within Harris County are dependent on vehicle transportation. Only thirteen (11.2%) zip codes had walkability scores above 70, where one can walk almost everywhere for services. These results are like the data reported in east Texas where walkability is low (Njororai et al., 2015; 2016). Simply living in

a neighborhood that has a higher walkability score has been shown to provide health benefits. In a population-based study by Chiu et al. (2015), those living in neighborhoods with walkability scores >90 had less than half the incidence of hypertension in comparison to their lower walkability counterparts. Walking is also correlated with positive mental health. In a study involving those in cognitive behavioral therapy, adding walking into their daily routines resulted in improvements in anxiety, depression, and phobias (Cooley et al., 2021). Environments with higher walkability scores can improve the holistic health of those within the community.

Regarding bike-ability, the majority (33, 91.7%) of the total zip codes studied do not have adequate biking infrastructure and scored less than 70 with only three (8.3%) of the reported bike-ability scores above 70. Bike-ability has been shown to have a direct association with an increased incidence of biking in a region, with each additional mile of bike lanes per square mile having a 1% increase in workers commuting by bicycle (Porter et al. 2019). With bike-ability showing a direct increase in those incorporating daily cycling, it is important to stress the health benefits of biking in a community. Cycle commuting is associated with decreased risk of cardiovascular disease and cancer (Celis-Moralis et al., 2017). Furthermore, there are many community benefits associated with cycling when accounting for reduced private vehicle use. Bicycle road infrastructure is approximately 50 times cheaper than cars, eight bicycles can be stored in a single parking space, and 28% of the world's CO2 admissions stem from transportation (Nematchoua et al., 2019).

The local built environment can have a major impact on the overall activity level of a community. Having a substantial infrastructure in place allows for communities to lead safe and healthy lifestyles. A term for sustainable land development that focuses on these factors is New Urbanism. New urbanism is the way of developing a densely populated community that allows for non-vehicular transportation. By creating mixed-use neighborhoods, communities can have access to most of their daily necessities to create sustainable living spaces (Stanislov & Chin, 2019). New Urbanism communities tend to have higher walkability scores than traditionally modeled communities and thus allow for a greater focus on public health (Irvani & Rao, 2019).

The biggest factor as to why New Urbanism-focused communities have higher walking scores is the idea that they are a “complete community.” A complete community contains mixed-use zoning so citizens can have places to live, work, and play. However, these communities are generally only located in suburbs outside of the city and are reserved for high-income families. Future zoning needs to account for low-income housing in complete communities so anyone, regardless of socioeconomic status can have access to safe, inclusive environments (Irvani and Rao, 2019). This data is congruent with the findings in Harris County. Zip code 77010 has a walkability score of 89 and an average salary of over USD 250,000 a year while zip code 77048 has a median income of just over USD 31,000 a year (US Census Bureau 2021). This trend can be seen across Harris County where the average walkability and bike-ability scores are both 40 and Harris County has a median income of just over USD 31,000 (US Census Bureau 2021). Zip codes such as 77010, 77202, 77098, 77052, and 77006 all have Walkability scores in the high 80's or above and have average salaries several times larger than the Harris County Average. While zip codes such as 77011, 77029, 77032, 77064, and 77082 all have walkability scores of 10 or less and have average salaries well below the Harris County average. Although this comparison is not perfect and there are several outliers such as 77005 with an average income of over \$192,000 and a walkability score of 62, there is a positive correlation between the income of a region and the walkability score (US Census Bureau, 2021).

When examining areas with high bike-ability, the only regions that have bike-ability scores >70 are 77201, 77051, and 77010 with scores of 70, 79, and 89, respectively. 77010 has a reported median income of USD 250,000 and is located directly in downtown Houston. However, directly beside it 77051 and 77201 have much lower median incomes of approximately USD 32,000 and USD 50,000, respectively (US Census Bureau 2021). The four lowest bike-ability scores are within zip codes 77043, 77046, 77081, and 77052, all with scores of 25. The median incomes of these four zip codes are approximately USD \$66,000, \$130,000, \$35,000, and N/A. These incomes are all higher than the median income of Harris County, except for 77052 which does not have a listed median income. These findings could suggest a general lack of development of bike-friendly infrastructure across the entire region. This lack of bike infrastructure has been seen in other regions as well. For example, a study from Virginia cited the barriers to the increase of bike infrastructure as lack of funding and lack of public support (Robarte et al., 2021).

The built environment has an impact on the health of the entire community no matter the age. Having safe environments for children to play in can help create social networks throughout the neighborhoods and promote healthy behavior. Having these environments in place, especially in densely populated regions, can help the entire family, and the greater community, lead healthier lives (Josey & Moore, 2018). Many of the most densely populated regions of Harris County not only have some of the lowest walkability scores but also have the lowest average incomes in the area (Zip Atlas Team, n.d). These most densely populated, or highest populated regions such as 77081, 77099, and 77036 all contain some of the lowest average incomes and walkability scores (US Census Bureau 2021). These regions that contain large proportions of working people need to be better developed to ensure the continued health of the greater population of those within Harris County

CONCLUSION

The results in this study show that most zip codes in the greater City of Houston area within Harris County have walkability and bike-ability scores under 69% meaning they are very car-dependent. This is an indicator of the need to actively pursue an agenda that promotes infrastructural investments that can bring about ease of walking and accessibility of community services at close range (Njororai et al., 2015; 2016). The lack of opportunities to walk predisposes the local population to engage more in driving than walking. This limits the opportunities to maintain an active physical lifestyle. There is a need to promote active lifestyles as well as a policy shift to invest in the appropriate physical activity-friendly infrastructure such as sidewalks, biking routes, walking trails, and walkable school routes, among others.

Limitations and Recommendations

The study focused on assessing walkability and bike-ability in only 115 Zip Codes in Harris County that are within the greater Houston area. For a broader and more comprehensive picture of Harris County, there is need to assess the walkability as well as bike-ability in all zip codes in the county. Such a comprehensive assessment would inform policy decisions to promote walkability and bike-ability as healthy lifestyles in the whole county rather than just a portion as per the current study.

Walkability for the local communities needs to be prioritized as the leadership and planning authorities at the city level consider the future expansion of administrative boundaries. Including mixed-use zoning with high-density housing units could allow for greater access to

walking as a form of exercise and transportation. Building high-density housing in such communities would allow more lower-income families to have access to safe and efficient ways to travel by foot for exercise or transportation. This would aid in reducing the prices of road maintenance, road noise, local pollution, and space required to accommodate personal vehicles. If such changes are implemented this would hopefully allow for safer communities in which one is able to walk to complete most, if not all daily errands. If these communities are successful, one could hopefully see a significant drop in hypertension, obesity, and CVD rates in the Harris County area in and around the City of Houston.

Regarding bike-ability, it is recommended that infrastructure be implemented city-wide, while at the same time carrying out a public-health campaign to help gain support for such a project (Josey & Moore, 2018). With a general increase of 1% of employees commuting to work per additional 1 mile/square mile of bike lanes added, a significant increase in those biking to perform their daily errands would hopefully be seen. This addition of bike lanes would likely require greater public support to achieve funding and the right-of-way laws to implement bike lanes throughout the city. This will be especially important in regions that have disadvantaged populations ((Braun et al., 2019; Robartes et al., 2021).

There are many regions in the greater Houston area that could be greatly revitalized by rezoning and rethinking the local infrastructure. For example, one of the most densely populated areas in Harris County is Gulfton, zip code 77081. 77081 has a walkability score of 62 and a median income of USD 33,500. As one of the most densely populated communities in the Houston area with 14,600 people per square mile, the community must fit its people (Shelton n.d). With such density and low walkability scores, people must use vehicular transportation to fulfill their daily needs. If mixed-use zoning is implemented to create these complete neighborhoods, it could help raise the walkability scores and provide cleaner, safer areas for families to live. Gulfton is not an isolated region either, as there are several regions in Harris County all with population densities over 10,000 people per square mile (Shelton, n.d.). As Harris County continues to grow and develop, the local legislature needs to ensure that these densely populated communities are not isolated, and regions with lower incomes can still have access to the amenities they require within a reasonable distance.

It is recommended that policymakers strive to provide physical activity-friendly environments to accommodate safe walking and biking if the physical activity profile of Harris County, as well as elsewhere in the state, is to improve. Those living outside of the center of Houston are less likely to use walking and biking, thus having fewer opportunities to expend their energy. Instead, they resort to the more expensive option of driving. Planning to grow and support surrounding areas of Houston can aid in the overall wellness of the area. Providing these populations with the infrastructure necessary to allow for walking and biking as a means of transportation is necessary to promote daily exercise requirements. Supporting infrastructure to aid in daily physical activity will subsequently reduce avoidable chronic diseases and improve public health.

If the infrastructure changes can be implemented across Harris County, a public information campaign could be utilized to garner support for decreased use of private vehicles in favor of walking or cycling. A city-wide effort to introduce a walking or biking-centric traveling community could have a resounding impact on the overall health of the community in areas such as reducing the incidence of chronic disease, reducing cardiovascular complications, lowering air and noise pollution levels, reducing traffic, reducing the cost of living in both lower and higher-income regions, and decreasing vehicle-related deaths in the region.

Acknowledgements

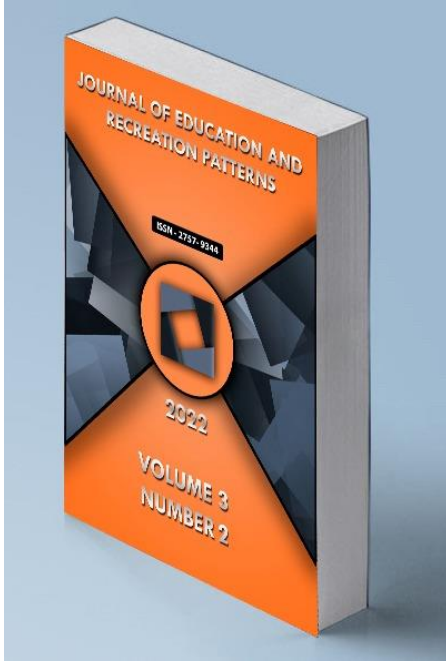
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A Study on the Effects of University Students' Motivation to Participate in Physical Activity on Quality of Life: The Case of Kırıkkale University

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ABSTRACT

One of the simplest ways to eliminate the negative effects of a less active life with the developing technology and to raise the standards of life quality is physical activity and exercise. In this study, it was aimed to examine the effects of university students' motivation to participate in physical activity on quality of life along with its sub-dimensions. A total of 400 university students, 212 male and 188 female, who were studying at various faculties and higher schools in Kırıkkale University in 2022, voluntarily participated in this research. Two different scales were applied to the participants. Physical activity participation motivation scale and quality of life scales were applied to the participants. In addition, the correlation between University Students' Motivation to Participate in Physical Activity and their responses to the Quality of Life Scale and the sub-dimensions of these scales were examined.

A correlation was found between university students' Motivation to Participate in Physical Activity sub-dimensions and some of the Quality of Life sub-dimensions. $r=0.160$, ($p<0.01$). Considering the genders, there was no correlation for male students. $r=0.010$, ($p>0.05$). There is a correlation between 'Environmental Reasons', one of the sub-dimensions of Motivation to Participate in Physical Activity, and 'Physical Health', one of the sub-dimensions of Quality of Life, for female students. $r= -0.149$, ($p<0.05$). It was determined that there were significant relationships between university students' motivation to participate in physical activity and their quality of life in terms of some sub-dimensions.

Keywords: Motivation, Physical Activity, Quality of Life



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INTRODUCTION

Universities are one of the most important social areas of modern societies. Universities are not only students, Administrative and Academic staff busy with education, training and academic activities as whole, but also, they are also social, cultural and physical living spaces. Both the academic success of university stakeholders and their potential for work efficiency are closely related to their feeling happy in their daily work pace and their high physical and psychological motivation. There is no doubt that university students take the most important place among these stakeholders. With this awareness, University Campus areas are equipped with various sports fields, recreation centers and some physical activity fields. In addition, they are transformed into social living spaces where artistic and cultural activities can be carried out.

The inactivity, stressful lifestyle, irregular and unhealthy diet that emerged with the development of technology adversely affect human life, leading to the emergence of various diseases and disorders, resulting in the formation of an unhealthy, unhappy and low quality of life society. Regular physical activity, exercise and sports help to solve most of these problems (Yılmaz and Ulaş, 2016).

Physical activity: It is the expenditure of energy as a result of the movement of the body through the skeletal muscles. It is the amount of movement an individual makes on a daily basis (Rowland & Freedson, 1994). It is defined as bodily movements that require energy expenditure above the basal level of energy spent as a result of contraction of skeletal muscles (Özer, 2001). When look at the literature, exercise is accepted as a subclass of physical activity, and various activities, sports, games and exercises done during the day are also considered as physical activity (Karaca, 1998). For reasons such as weight control, healthy life, socialization, coping with stress, preventing diseases, forgetting daily problems, wanting to avoid bad habits, getting away from negative thoughts, having fun, developing physical self, making use of free time, developing healthy lifestyle behaviors, increasing self-confidence. Furthermore, participating daily physical activity will subsequently reduce avoidable chronic diseases and improve public health (Hudson et al. 2022). Based on the fact that people cannot break away from physical activities because of this. In this context, one of the factors that increases the effectiveness of the individual's purpose of participating in physical activity is motivation. Motivation is the force that moves the person towards his/her goals or objectives and directs the person to achieve the purpose or goal in the process of taking action (Tekkurşun Demir, 2018).

Variables such as good physical appearance, proportionality of height and weight, satisfaction with physical characteristics, and coping with stress affect the person positively in a motivational way. It can be said that participation in physical activity is effective in this positive motivational mood that an individual will have (İlhan, 2010). There are many definitions in the literature on Quality of Life. Quality of Life has been regarded as synonymous with various terms in the literature. Most of the researchers used the concept of Quality of Life synonymously with life satisfaction, life satisfaction and happiness, and defined Quality of Life as happiness, satisfaction and harmony (Bayrak, 2011). It is the term that expresses the general welfare and access level of individuals or societies. Quality of Life data; It is used in a wide range of fields including international development, health, politics and employment (Öztürk, 2005). Quality of Life has many components: benefiting from health and education services, adequate nutrition and protection, a healthy environment, right, opportunities and gender equality, participation in daily life, dignity and security. In addition, many physical activities lead students to achieve good academic outcomes and are positively reflected in their overall grade point average (Kim et al. 2022).

All of these components are individually important; Even the lack of one of them hurt “I’m living a quality life’s feeling. Looking at the definitions of Quality of Life, it is seen that researchers have brought different definitions to the concept of Quality of Life. While some of these definitions explain Quality of Life with environmental features, some with economic features, some explain it with sociological and psychological features. The purpose of this research; The aim of this study is to examine how the motivation of students, one of the most important stakeholders of universities, to participate in physical activity affects their perceptions of their quality of life. In addition, 'how do students differ according to their gender?' an answer to the question was also sought. There are significant correlations between university students' motivation to participate in physical activity and their quality of life.

METHOD AND MATERIALS

Population and Sample

A total of 400 university students, 212 male and 188 female, who were studying at various faculties and higher schools in Kırıkkale University in 2022, voluntarily participated in this research.

Data Collection Tools

Two different scales were applied to the participants. The subjects were selected at different times and by random method. First, the participants were administered the Motivation Scale for Participation in Physical Activity (MSPPA) questionnaire. The validity and reliability study of this scale was carried out by Tekkurşun Demir and Cicioğlu (2018). The scale is a Likert type scale. It consists of sixteen questions and each question is given a score between 1 and 5. The maximum score that can be obtained from the scale is 80. he scale includes “Individual Causes” (items 1, 2, 3, 4, 5, 6), “Environmental Causes” (items 7, 8, 9, 10, 11, 12) and “No reason” (items 13, 14, 15, 16.) consists of 3 factors named as. The 3rd, 9th, 13th, 14th, 15th, and 16th questions shown in the scale were given as reversed items. Tekkurşun Demir and Cicioğlu (2018) found the Cronbach Alpha scores of the scale to be .89 for the individual causes sub-dimension, .86 for the environmental causes and .82 for the No-Cause sub-dimension. The scale's evaluation is as follows:

Options	Points	Score Interval	Scale Evaluation
Absolutely I agree	5	65-80	Very high
I agree	4	49-64	High
I'm undecided	3	33-48	Middle
I do not agree	2	17-32	Low
I strongly disagree	1	1-16	Very low

Secondly, the World Health Organization Quality of Life Scale-Short Form (WHOQOL-BREF) questionnaire was applied to the participants. This scale was developed by the World Health Organization (WHO) and a comprehensive tool that measures well-being and allows for cross-cultural comparisons is the scale. As a result of pilot studies carried out in 15 centers around the world, WHOQOL-100 with 100 questions and WHOQOL-BRE consisting of 26 questions selected from among were created. The WHOQOL-BREF scale consists of 26 questions, one of which is the general perceived quality of life and the other two questions about the perceived health status, and 5 areas: general, physical, psychological, social relations and environmental areas. There is one more question about the environment in the Turkish adaptation of the scale and it includes 27 questions in total. The sub-dimensions of the scale

are General Health Status: 1st and 2nd questions, Physical Health: 3,4,10,15,16,17 and 18th questions, Psychological: 5,6,7,11,19 and 26th questions, Social Relations: 20, 21 and 22 questions and Environment consists of 8, 9, 12, 13, 14, 23, 24 and 25 questions. The sum of the questions in the relevant sections gives the subject's raw score for the relevant section. Percentiles of the scale are calculated separately for each sub-dimension with the formula (Subject's raw score) - (The lowest possible score for that parameter) / (Score range of that sub-parameter) x 100.

Data Analysis

Analysis of the data was done in SPSS (IBM SPSS Version 26) program. For each of the scales used, the mean values and standard deviations were calculated according to the sub-dimensions of the scales and the gender of the subjects. In addition, the correlation (we used Pearson) between University Students' Motivation to Participate in Physical Activity and their responses to the Quality of Life Scale and the sub-dimensions of these scales were examined.

FINDINGS

According to the answers of 400 university students participating in the study to the applied scales.

Table 1. Distribution of University Students' Answers to the Scale of Motivation to Participate in Physical Activity into the Sub-Dimensions

Motivation	Total (n=400)		Male (n=212)		Female (n=188)	
	Mean	Sd	Mean	Sd	Mean	Sd
Individual Reasons	20,83	3,49	20,26	3,55	21,58	3,27
Environmental Reasons	19,52	4,32	19,61	4,14	19,39	4,57
No Reasons	7,85	3,49	8,01	3,39	7,63	3,63
Motivational to Participate in P.A	48,19	5,91	47,88	5,66	48,60	6,22

The motivation levels for participation in physical activity were determined to be average ($48.19/16=3.01$) for all students considering the number of questions. Considering the number of questions for male students, the average was determined as ($47.88/16=2.99$). Considering the number of questions for female students, the average was determined as ($48.60/16=3.04$). Considering the sub-dimensions of motivation to participate in physical activity, the highest average was determined as ($20.83/6=3.47$) in the individual reasons sub-dimension, considering the number of questions for all students. Considering the genders, in the sub-dimensions of motivation to participate in physical activity, the highest average was determined as ($20.26/6=3.38$) in the individual reasons sub-dimension, considering the number of questions for male students. For female students, the average was determined as ($21.58/6=3.60$) considering the number of questions.

Table 2. Distribution of University Students' Answers to the Quality of Life Scale into the Sub-Dimensions

Quality of Life	Total (n=400)		Male (n=212)		Female (n=188)	
	Mean	Sd	Mean	Sd	Mean	Sd
General Health Condition	5,70	1,30	5,69	1,27	5,70	1,35
Physical Health	20,89	3,93	20,79	4,05	21,02	3,76
Psychological	19,45	3,51	19,34	3,63	19,60	3,36
Social Relationships	10,14	2,81	10,17	3,08	10,10	2,40
Environmental	26,01	5,26	25,64	5,17	26,51	5,36
Quality of Life Total	85,27	13,44	84,64	13,70	86,12	13,07

Considering the number of questions for all students in the Quality of Life scale, the average was determined as ($85.27/26=3.28$). Considering the number of questions for male

students, the average was determined as (84.64/26=3.26). Considering the number of questions for female students, the average was determined as (86.12/26=3.31). Considering the Quality of Life sub-dimensions, the highest average was determined as (10.14/3=3.38) for all students in the social relations sub-dimension, considering the number of questions. Considering the genders, the highest average in the sub-dimensions of quality of life was determined as (10.17/3=3.39) in the social relations sub-dimension, considering the number of questions for male students. For female students, the average was determined as (10.17/3=3.37) considering the number of questions.

Table 3. Correlation relationship between University Students' Motivation to Participate in Physical Activity and their Responses to the Quality of Life Scale and the Sub-Dimensions

		General Health C.			Physical Health			Psychological			
		r	r ²	p	r	r ²	p	r	r ²	p	
Total	Individual R.	0,176**	0,031	0,001	-0,059	0,004	0,235	0,032	0,001	0,517	
	Environmental R.	0,054	0,003	0,283	-0,114*	0,013	0,022	-0,039	0,001	0,440	
	No Reasons	-0,105*	0,011	0,036	-0,051	0,003	0,310	0,017	0,000	0,735	
Male	Individual R.	0,213**	0,045	0,002	0,00	0,000	0,998	0,094	0,009	0,172	
	Environmental R.	0,089	0,008	0,196	-0,078	0,006	0,256	-0,001	0,000	0,991	
	No Reasons	-0,116	0,013	0,093	-0,032	0,001	0,645	-0,014	0,000	0,844	
Female	Individual R.	0,119	0,014	0,103	-0,140	0,020	0,055	-0,042	0,002	0,564	
	Environmental R.	0,012	0,000	0,873	-0,149*	0,022	0,041	-0,079	0,006	0,282	
	No Reasons	-0,088	0,008	0,230	-0,069	0,005	0,347	0,048	0,002	0,517	
		Social Relationships			Environmental						
		r	r ²	p	r	r ²	p				
Total	Individual Reasons	0,160**	0,026	0,001	0,084	0,007	0,092				
	Environmental R.	-0,018	0,000	0,723	0,055	0,003	0,270				
	No Reasons	-0,035	0,001	0,480	0,028	0,001	0,582				
Male	Individual Reasons	0,214**	0,046	0,002	0,123	0,015	0,074				
	Environmental R.	0,010	0,000	0,882	0,109	0,012	0,112				
	No Reasons	-0,028	0,001	0,689	-0,030	0,001	0,666				
Female	Individual Reasons	0,111	0,012	0,129	0,017	0,000	0,821				
	Environmental R.	-0,046	0,002	0,534	-0,006	0,000	0,930				
	No Reasons	-0,055	0,003	0,450	0,099	0,010	0,175				

**Correlation is significant at the 0.01

*Correlation is significant at the 0.05

There is a correlation between university students' Motivation to Participate in Physical Activity sub-dimensions 'Individual Reasons' and 'General Health Status and Social Relationships' sub-dimensions of Quality of Life. $r = 0,176$ ($p = 0,01$).

There is a correlation between university students' Motivation to Participate in Physical Activity sub-dimensions 'Environmental Reasons' and 'Physical Health' sub-dimensions of Quality of Life. $r = - 0,114$, ($p = 0,022$).

There is a correlation between university students' Motivation to Participate in Physical Activity sub-dimension, 'No reason' sub-dimension and 'General Health Status' sub-dimension of Quality of Life. $r = - 0,105$, ($p < 0,036$).

Considering the gender of university students, no correlation was observed between male students' Motivation to Participate in Physical Activity sub-dimensions and Quality of Life sub-dimensions ($p>0,05$).

Considering the genders of university students, a correlation is observed between 'Environmental Reasons', which is one of the sub-dimensions of Motivation to Participate in Physical Activity, and 'Physical Health', which is one of the sub-dimensions of Quality of Life. $r = - 0.149$, ($p < 0.041$).

DISCUSSION

The main purpose of this study is to investigate whether university students' motivation to participate in physical activity has an effect on their perception of quality of life. In the literature, there are many studies on the subject for students. Some of them are Çakır (2019), Eriş and Anıl (2016), Kangal (2019), Öztürk (2005), Ren (2009), Sirgy et al. (2007) and Hazar et al. (2017).

The result in the Table 1 shows; It was concluded that the average of the total scores was at the 'moderate' level when compared to the scale score evaluations determined in the literature. The situation is the same when considering the genders too. However, the mean value of female students was found to be higher than that of male students, albeit with a small difference. In the literature, many studies have been observed in the opposite direction, that is, males are found to be higher or there is no significant difference between them like our study. Some of those; Çakır, (2019), Demir and Cicioğlu, (2019), Hazar et al., (2017) found that male and female students had similar physical activity levels in their studies and stated that no significant difference was found between the motivation scores of female and male students to participate in physical activity. Eriş and Anıl (2016) in their study examining the quality of life of university students, concluded that female students found the quality of university life more positive than male students. Ceker et al. (2013) concluded that participation in regular physical activity decreases depending on age in both men and women and stated that only in the 50-59 age group women are more active than men.

In addition, in the examinations of the sub-dimensions of physical activity, it was observed that the individual causes sub-dimension had the highest average for both genders. Kolukısa et al. (2019) in their study, they found that among the reasons for doing physical activity, the biggest participation, motivation, health and weight problem are in the first place.

The result in the Table 2 shows; According to the findings of our study, all of the students have an above-average quality of life satisfaction. In addition, it can be said that female students have higher quality of life satisfaction perceptions than male students. This result is parallel with many of the studies in the literature. For example, Ren (2009), in his study on college students, found that the satisfaction level of female students with their lives was significantly different from that of males. Kangal (2009) concluded that there is a significant difference in favor of female students in terms of gender in his university quality of life research on Akdeniz University students.

The result in the Table 3 shows; the findings of our study show that there is a correlation between the 'Individual Reasons' sub-dimension of Motivation to Participate in Physical Activity and the 'General Health Status and Social Relationships' sub-dimensions of Quality of Life ($p < 0.01$). This situation shows parallelism with similar studies in the literature. Yilmaz et al. (2016) observed in their study that health and physical appearance are two important criteria for women to do physical activity.

One of the findings of this study is that there is a correlation between the 'Environmental Reasons' sub-dimension, which is one of the sub-dimensions of Motivation to Participate in Physical Activity, and the 'Physical Health' sub-dimension, which is one of the sub-dimensions of the Quality of Life ($p < 0.05$). It can be said that there are similar results in the literature too. Murcia et al. (2007) concluded in their study that there was a significant difference between enjoying physical activity and frequency of doing sports. They found that there is a positive effect between enjoying sports activity and the frequency of doing sports, and as the frequency of doing sports increases, the participation in more physical activities also increases. Bize et al. (2007) as a result of their study, they determined that there is a significant relationship between the level of physical activity stated by the person and the health-related quality of life. Sirgy et al. (2007) stated in their study that university students' active participation in sports activities at school is highly correlated with the perception of university quality of life. Our study shows parallelism with the aforementioned studies.

Another result we have reached is that there is a correlation between 'Environmental Reasons', one of the sub-dimensions of Motivation to Participate in Physical Activity, and 'Physical Health', one of the sub-dimensions of Quality of Life, when the gender of university students is considered ($p < 0.05$). In their study on nurses, they concluded that despite the existence of factors that negatively affect the quality of life such as age, gender, presence of chronic disease, adequate physical activity positively affects the quality of life of nurses. This study supports our findings.

RESULT

As a result, the motivation to participate in physical activity directly affects the quality of life of university students. Considering the sub-dimensions of motivation to participate in physical activity, significant relationships are observed in students' perceptions of quality of life. Like many studies in the literature, this study showed that motivation to participate in physical activity positively affects individuals' quality of life and satisfaction levels. Young individuals who move away from physical activity due to factors such as constantly increasing technology use and digital addiction are negatively affected in terms of their quality of life and satisfaction. Despite these bad conditions, students' physical activity motivation is above average values. Likewise, their satisfaction with quality of life is also above the average values.

Regarding the environmental reasons that will increase the motivation of university students to participate in physical activity, the areas where they can exercise should be increased, such as sports facilities and recreation areas, especially in campus areas and in areas that students can easily reach. Such studies should be carried out on wider participation and not only university students, but all individuals in these age groups, to determine the motivation of the young generation to participate in physical activities, and activities that increase this motivation should be supported. Because participation in physical activities directly affects people's quality of life and the satisfaction they feel from life.

Limitations and Recommendations

This study was limited to Kırıkkale University students studying at different faculties in 2022.

Future studies should be done more comprehensively by increasing the number of participants. In addition, the age groups and academic achievements of the participants should also be considered.

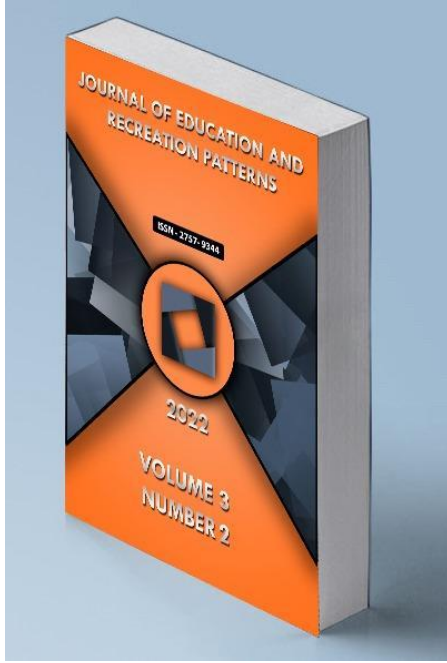
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Examination of University Students' Reasons to Participate in Nature-Based Sports Leisure Activities and Leisure Constraints

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ABSTRACT

This study, aimed to examine main the reasons for university students' participation in leisure activities and leisure constraints. A total of 485 university students including 294 female and 191 male university students from different departments of Süleyman Demirel University and Mehmet Akif Ersoy University participated in this study in the 2020-2021 academic year. In the data collection process of the research, "Personal Information Form", "The Leisure Constraints Questionnaire" and "Questionnaire on Reason of Doing Sport" were used. During the analysis of the data obtained in the research, Mann Whitney U analysis and Chi-Square analysis were used in the SPSS 22.0 program. At the end of the research, it was determined that the main reasons for students heading towards sports in their free time are to stay away from stress, improve their health, be an area of interest, acquire new skills and improve their skills. It was seen that the main obstacles encountered by the students in the process of participating in leisure activities were transportation problems, lack of facilities and lack of knowledge, followed by psychology of the individual, lack of time and interest, and lack of friends, respectively. According to age and gender variables, it was determined that both the reasons for the students participating in the study to engage in sports in their free time and the barriers to participation in leisure activities differed significantly ($p < 0.05$). As a result of the research, it can be concluded that university students use sports to reduce stress and improve health. In addition, it can be stated that age and gender variables were determinative on the barriers to sports and leisure. Events and organizations can be planned so that students have positive feedback about sports. It is thought that this study will shed light on future research.

Keywords: Leisure, Leisure Constraints, University Students, Recreation



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INTRODUCTION

Recreation is all of the social, spiritual, mental and physical activities that cannot be transferred to others, that give energy and happiness to people, and that are carried out actively or passively. Recreational activities, on the other hand, are activities that individuals do in their spare time within the framework of personal satisfaction and voluntariness" (Güngörmüş, 2007). According to another definition, the concept of recreation was expressed as "acts that are satisfying in terms of pleasure, concern for physical and spiritual regeneration, and includes leisure use associated with the individual's physiological, economic, cultural and social opportunities" (Sevil, 2012). Individuals enjoy resting and being with their loved ones at times except work life (Kuş-Şahin et al., 2011). Therefore, the time outside of working life is tremendously important for individuals. In particular, the desire of individuals living in big cities to escape from over-populated city life leads individuals to tend to recreational activities (Kuş-Şahin et al., 2011). According to Müderrisoğlu and Uzun (2004), the prevalence of routine lifestyle has increased due to the frequent tendency of individuals to recreational activities in our age. Cities become crowded and uninhabitable due to technological developments, rapid population growth and urbanization. All together, these facts have increased people's entertainment and relaxation needs.

Conceptually, recreation developed with the increase in leisure in developed and developing countries (Türkmen et al., 2013). Just as work provides individuals with a purpose, participation in recreational activities also provides purpose. The purpose of being involved in recreational activities is seen as a reward when not working. Today, individuals have opportunities to easily spend their public holidays and other spare time. Moreover, in many countries, recreational activities have become a part of daily life, and people have begun to evaluate recreational activities as a tool to escape the pressures that develop due to social reasons (Türkmen et al., 2013). Especially in civilized societies, making use of free time is one of the most important elements that increase the quality of life of a person. Similar study conducted by (Ünver, 2002) showed that motivation to participate in physical activity positively affects individuals' quality of life and satisfaction levels. Further, the efficient use of this time contributes to the self-discovery of the individual and to his physical and mental renewal (Aslan & Cansever, 2012; Çuhadar et al., 2019).

From the information obtained from the literature on recreation, people tend to use it recreationally. leisure time activities" How do they spend their free time? In addition, it is remarkable that people tend to spend their spare time efficiently, particularly since leisure activities that include physical activity protect and improve their health in several ways (Krustrup et al., 2010; Rogers et al., 2009; Verstraete et al., 2007). Physical activities preferred for recreational purposes are an undeniable fact for a healthy life (Doğaner & Balcı, 2017; Çuhadar et al., 2019). On the other hand, it is thought that people are not always able to participate in leisure activities due to different reasons and restrictions. Past literature studies noted (Yerlisu-Lapa & Köse, 2018), that people should develop some strategies to understand the factors that prevent them from participating in leisure activities. Because, university students have a significant proportion among the groups that have barriers to participation in leisure activities. Because during their university education, students spend most of their time in classes or courses to support their personal development .In addition, university students living far from their families have problems in participating in any activity they want, mainly due to financial hardship. The factors that prevent university students from participating in leisure activities are an issue that will contribute to taking the necessary measures to minimize these barriers. Therefore, in this study, it was aimed to examine the reasons for university students' participation in leisure activities and constraints.

Leisure Time Concept

In order to understand the concept of leisure, first of all, it is necessary to define the concept of "time". The concept of time appears as a phenomenon that affects and controls human life since the earliest periods of human history, as it is today (Öztürk, 2018). When considered from a conceptual point of view, the concept of time is defined as "the basic element that creates human life, which has no beginning or end, cannot be grasped, and does not correspond to a concrete concept". In the axis of this definition, one of the most distinctive features of time is that it cannot be rented, purchased, borrowed or stored (Ayyıldız, 2015; Belli & Gürbüz, 2012; Er et al., 2019). The concept of time is divided into two as the time that people spare for working life and the time remaining of working life. Non-work time is an important part of people's daily lives, and the time period when people meet their basic needs such as eating, sleeping, and spending time for personal care is expressed as non-work time. Some of the actions taken during the non-work period are compulsory and some of them are voluntary actions. The period outside of work is expressed in the literature as leisure, and social time (Demir & Demir, 2014).

The Historical Development of Leisure Activities

Primitive societies, which were hunted to meet their physiological needs in ancient times, stepped into business life in time and produced many new products that were essentially needed for themselves, such as bags, clothes, and various tools. In this respect, primitive civilizations have passed into the modern age and it has been possible for them to settle in certain areas and engage in agricultural activities other than hunting (Veal, 2004). It is stated that the texts prepared by Plato and Aristotle in the ancient Greek civilization contributed to the development of recreational activities included within the scope of activities performed by privileged people in societies such as nobles, soldiers, and clergy (Demirel, 2009).

As it can be understood from the information above, the development of the leisure industry is as old as the history of humanity. The approaches and methods of participating in leisure activities have changed over the centuries. In ancient times, people came together for their basic needs such as shelter and nutrition. They were engaged in foraging and hunting to meet these needs. The most significant development in the leisure industry began with the transition of people from a nomadic life to a settled life. In the transition period from the farming societies to the industrial society people started to build large cities and factories and after the terms of work and leisure were gained a clearer meaning. Many remarkable developments, such as agreements on paid holidays and working hours, are the output of efforts for better planning leisure (Demir & Oral, 2007).

The Historical Development of Leisure Activities in Turkey

When we look at the development of recreational activities in Turks, it is noteworthy that before the Turks settled in Anatolian lands, war preparations turned into games in their spare time, and especially the games played on horses became widespread. During the Seljuk period, craft organizations called guild organizations contributed to the route of recreation activities. In this process, the concepts of working time and non-working time were separated from each other, and this situation brought leisure to a more understandable position (Yüncü et al., 2013). When it comes to today, it is seen that the state plays an active role in the implementation and development of leisure activities in Turkey. Particularly, the activities carried out by the Ministry of Youth Services and Sports and the free time activities in many sports branches are observed throughout the year. In addition, local governments and universities also direct activities aimed at increasing the quality of life of the local people (Eravsar, 2020).

Benefits of Leisure Activities

Although it is known various benefits, especially in research studies applied to different groups demonstrate that leisure activities have many other benefits for people, especially in personal, home, and social development life (Selçuk & Akdağ, 2020). In the study conducted by Bakır and Aydoğan (2011), it was emphasized that there were many benefits of participating in sports activities for individuals with visual impairment. According to the research data, it was determined that visually impaired people who participate in sports on a regular basis had a higher potential to do work compared to sedentary visually impaired people, and the muscle-nervous system works better. In the same research, it was pointed out that participation in sports activities were beneficial in improving the physical fitness characteristics of visually impaired people. Apart from physical benefits, physical activities especially within the frame of leisure activities have several positive effects such as decreasing loneliness and boredom, improving lifestyle and has benefits in gaining a sports routine (Temel and Tükel 2022). Participation in recreational activities also has positive impacts on motor development. In the study applied on mentally handicapped girls, it was aimed to determine the effects of participation in basic gymnastic movements on the development of balance skills and in this study total of 10 mentally handicapped girls without any physical disability was chosen and at this application basic gymnastics exercises were applied to those girls during 3 days a week and 60 minutes a day for 6 weeks. As a result of the research, it was observed that there was a statistically significant increase in balance capacity in parallel with the gymnastic activities applied for the mentally handicapped (Aktekin et al., 2014).

Constraints to Participation in Leisure Activities

It is thought that individuals do not participate in leisure activities due to their work intensity and some variables arising from their daily lives (Jackson et al., 1993). In this sense, the concept of leisure constraints emerges as a concept that tries to explain the underlying causes of people's participation or non-participation in leisure activities (Gürbüz et al., 2020). There are always factors that prevent people from participating in leisure barriers. On the other hand, it is thought that people benefit from some strategies to overcome the constraints to participation in leisure activities. In another study on this subject, it was determined that people give priority to time management in order to overcome leisure constraints (Tercan-Kaas, 2016). In the same research, it was also seen that those who want to participate in activities that require skills try to get support from individuals who are experts in these fields, and those who want to participate in the activity with their friends try to persuade their friends. In addition, it was determined that individuals who have problems participating in activities that may cause injury, bought some protective equipment, and took some measures to cover the costs of the activities (Tercan-Kaas, 2016).

METHODS AND MATERIALS

Data Collection Tools and Method

Personal information form was used to determine the demographic characteristics of the students participating in this research. A total of four questions were included in the personal information form prepared by the researcher. Applied questions were used in order to determine the gender, age groups, income levels and faculties/schools of the participants. In order to determine the reasons for participating in sports activities in the free time of the students participating in the research, a questionnaire developed and applied by Kalkan (2012) was used in the study titled "The Reasons for Individuals Doing Outdoor Recreation, Outdoor Sports: Sample of Antalya". The questionnaire consists of a total of 12 items and has a 5-point

Likert-type structure. The answers given to each item in the questionnaire about the reasons for doing sports are listed as 1=Definitely yes, 2=Yes, 3=Partly, 4=No, 5=Definitely no.

The "The Leisure Constraints Questionnaire" "LCQ" was used to determine the barriers to participation in leisure activities of university students participating in the research. The scale was first developed by Alexandris and Carrol (1997), and the Turkish validity and reliability study of the scale was carried out by Karakucuk and Gürbüz (2006). The scale consists of 27 items and six sub-dimensions, the sub-dimensions of the scale are individual psychology (items 1, 2, 3, 4, 5, and 6), lack of information (items 7, 8, and 9), the inadequacy of facilities (10, 11). 12 and 13), transportation problems (items 14, 15, 16, and 17), lack of friends (items 18, 19, and 20), lack of time and interest (21, 22, 23, 24, 25, 26), and 27.). In the studies of the scale in Turkey, it was reported that the internal consistency coefficient for the sub-dimensions was 0.65 and above (Çoruh, 2013).

In the analysis of the data, the SPSS 22.0 program was used. Since the Leisure Constraints Scale is a Likert-type scale, reliability and normality tests were applied to its sub-dimensions. As a result of the Reliability Analysis, Cronbach's Alpha internal consistency coefficients for the scale sub-dimensions were respectively lack of time and interest (.794), individual psychology (.794), lack of information (.786), transportation problem (.763), lack of facilities (.787), lack of friends (.765). These values show that the sub-dimensions of the scale are above the medium level and have reliability considered appropriate for analysis. One Sample Kolmogorov-Smirnov test was used to determine the normal distribution and according to the analysis result, it was determined that the sub-dimensions of the scale were not suitable for the normal distribution. For this reason, the sub-dimension scores of the scale were analyzed by the Mann-Whitney U analysis, which is a non-parametric analysis according to gender and age groups. The data of Questionnaire on Reason of Doing Sport consists of categorical data. For this reason, scale items were compared according to gender and age groups with Chi-Square analysis using Crosstabs.

Sampling

The population of this research consists of the students of Süleyman Demirel University and Mehmet Akif Ersoy University. While the students studying in different departments of these universities constitute the sample group of the research; A total of 485 undergraduate students, 294 women and 191 men, participated in the research. The data collection questionnaire was applied to the students who constituted the sample group of the research, outside the campus during their extracurricular times. Mixed method was used in the sampling process and the data collection questionnaire of the research was filled by using face-to-face interview technique with the students.

FINDINGS

Table 1. Satisfaction Frequency and Percentage Distributions of the Reasons for Participating in Nature-Based Leisure Activities of University Students Participating in the Research on Demographic Information

Variable	Sub-Variable	f	%
Gender	Female	294	60,6
	Male	191	39,4
Age Group	18-20 aged	355	73,2
	21-23 aged	130	26,8

When the demographic findings were examined, 60.6% of the students participating in the study were female, 39.4% were male, 73.2% were in the 18-0 age group, and 26.8% were in the 21-23 age group.

Table 2. Descriptive Statistics Regarding the Barriers to Participate in Nature-Based Leisure Activities of University Students Participating in the Research

Sub-Dimension	N	X	Sd
Lack of time and interest	485	2,70	,592
Individual psychology	485	2,76	,604
Lack of Information	485	2,78	,739
Transportation Problem	485	2,93	,699
Lack of facilities	485	2,93	,666
Lack of friend	485	2,53	,740

As seen in table 2, it was determined that the leisure constraints of the students participating in this study were transportation problems, lack of facilities and lack of information, followed by individual psychology, lack of time and interest, and lack of friends, respectively.

Table 3. Comparison of the Reasons for Participating in Nature-Based Leisure Activities of University Students participating in the Research in terms of Gender Variable

Reasons	Gender	F%	Definitely Yes			Definitely No		chi-square
			Yes	Partly	No	Yes	No	
Having my interests, appealing to me	Female	f	167	91	28	6	2	x2=,942 df=4 p=,918
		%	56,8	31,0	9,5	2,0	0,7	
	Male	f	102	67	17	4	1	
		%	53,4	35,1	8,9	2,1	0,5	
Influence of those around me	Female	f	48	81	119	31	15	x2=7,887 df=4 p=,096
		%	16,3	27,6	40,5	10,5	5,1	
	Male	f	31	73	68	14	5	
		%	16,2	38,2	35,6	7,3	2,6	
Desire to be with my friends	Female	f	82	124	67	18	3	x2=,727 df=4 p=,948
		%	27,9	42,2	22,8	6,1	1,0	
	Male	f	51	85	41	13	1	
		%	26,7	44,5	21,5	6,8	0,5	
To positively affect my health	Female	f	142	104	40	8	0	x2=8,153 df=4 p=,086
		%	48,3	35,4	13,6	2,7	0,0	
	Male	f	73	77	30	9	2	
		%	38,2	40,3	15,7	4,7	1,0	
Because it relaxes and increases my work efficiency	Female	f	107	101	60	23	3	x2=4,464 df=4 p=,347
		%	36,4	34,4	20,4	7,8	1,0	
	Male	f	56	75	38	17	5	
		%	29,3	39,3	19,9	8,9	2,6	
Desire to get rid of monotony	Female	f	129	90	65	7	3	x2=14,436 df=4 p=,065
		%	43,9	30,6	22,1	2,4	1,0	
	Male	f	62	74	37	15	3	
		%	32,5	38,7	19,4	7,9	1,6	

To get rid of boredom and relieve stress	Male	f	151	103	30	10	0	x ² =11,818 df=4 p=,019
		%	51,4	35,0	10,2	3,4	0,0	
	Female	f	75	76	30	7	3	
		%	39,3	39,8	15,7	3,7	1,6	
Acquiring and using new skills	Male	f	137	100	43	10	4	x ² =9,811 df=4 p=,044
		%	46,6	34,0	14,6	3,4	1,4	
	Female	f	69	83	28	11	0	
		%	36,1	43,5	14,7	5,8	0,0	
Entering a new environment	Male	f	83	99	78	27	7	x ² =1,076 df=4 p=,898
		%	28,2	33,7	26,5	9,2	2,4	
	Female	f	50	63	54	21	3	
		%	26,2	33,0	28,3	11,0	1,6	
Integration with nature	Male	f	110	96	65	18	5	x ² =10,477 df=4 p=,033
		%	37,4	32,7	22,1	6,1	1,7	
	Female	f	56	73	33	22	7	
		%	29,3	38,2	17,3	11,5	3,7	
Feeling of loneliness	Male	f	49	50	85	80	30	x ² =,892 df=4 p=,927
		%	16,7	17,0	28,9	27,2	10,2	
	Female	f	32	36	59	46	18	
		%	16,8	18,8	30,9	24,1	9,4	
Being a good example to my family	Male	f	93	79	62	38	22	x ² =6,148 df=4 p=,188
		%	31,6	26,9	21,1	12,9	7,5	
	Female	f	60	63	34	28	6	
		%	31,4	33,0	17,8	14,7	3,1	

According to table 3, it has been determined that female students have higher levels of doing sports for the purpose of acquiring and using new skills, getting rid of stress and relieving stress, and integrating with nature when compared to male students ($p < 0.05$). It was concluded that other reasons for students' participation in sports did not differ significantly according to the gender of the students ($p > 0.05$).

Table 4. Comparison of the Barriers to Participating in Nature-Based Leisure Activities of University Students participating in the Research in terms of Gender Variable

Sub-Dimension	Gender	N	X	Sd	Rank Avg.	Top Ranking	U	p
Lack of time and interest	Female	294	2,74	0,61	254,09	74701,5	24817,5	,030
	Male	191	2,63	0,56	225,93	43153,5		
Individual psychology	Female	294	2,82	0,57	258,24	75921,5	23597,5	,003
	Male	191	2,66	0,64	219,55	41933,5		
Lack of Information	Female	294	2,83	0,75	253,41	74502,5	25016,5	,040
	Male	191	2,69	0,72	226,98	43352,5		
Lack of Transportation	Female	294	2,99	0,69	253,35	74484,0	25035,0	,042
	Male	191	2,84	0,71	227,07	43371,0		
Lack of Facility	Female	294	2,96	0,68	250,13	73539,0	25980,0	,160
	Male	191	2,87	0,65	232,02	44316,0		
Lack of Friend	Female	294	2,58	0,76	252,78	74316,0	25203,0	,054
	Male	191	2,45	0,70	227,95	43539,0		

When the table above examined, it was determined that the leisure constraints of the university students participating in this study did not differ significantly according to gender

variables in the sub-dimensions of lack of friends, lack of facilities, and transportation problems ($p>0.05$). Other findings showed that there was a significant difference in favor of female students in the sub-dimensions of lack of time and interest, individual psychology, and lack of knowledge ($p<0.05$).

DISCUSSION AND CONCLUSION

Current skill level has been determined that the reasons for participating in sports activities in the free time of the students participating in this research are being an area of interest, getting away from stress, improving their health, acquiring new skills and improving their skills. It was determined that the factors that have a low level of influence on the reasons for students to engage in sports in their free time are being affected by the environment, relaxing and increasing work efficiency, entering a new environment, getting away from loneliness, and being a good example to their family. In the literature, similar studies conducted in which the reasons for the sports orientation of university students in their free time are discussed have also reached the same results with the research findings. In a study carried out by Yılmaz (2011) the evaluation of the leisure of the athletes' students who are actively competitor in the athletics teams of the universities stressed that they find the on-campus sports activity areas insufficient, on the other hand, if they are given the opportunity, they can spend their free time by engaging sport activities. In another study conducted by (Öksüz, 2019), the importance of investigating the leisure habits of individuals was emphasized. In this research, it was determined that the main reasons for students to participate in sports activities in their free time are being an area of interest, getting away from stress, improving their health, acquiring new skills and improving their skills. This result is a similar reflection of the study conducted by Temel and Tükel (2021) it indicates that engaging with recreational physical activities makes a substantial contribution to the university students' health and level of happiness. Based on the other findings of the study, the factors that have a low level of influence on the reasons for students to engage in sports in their free time were "being affected by the environment, relaxing and increasing work efficiency, entering a new environment, getting away from loneliness, and being a good example to their family". Türker et al. (2016) reported in their research that the participants could not participate sufficiently in leisure time activities. As for the reasons for not participating in free time activities; They determined that it is due to the fact that people do not have friends with whom they can carry out their activities, insufficient activities in the environment they live in, and lack of leisure time habits.

In the research performed by Doğaner & Balcı (2017), it was intended to examine the purposes of doing sports in the free time of Ankara University students. In the research, it was seen that the primary aims of the students to engage in sports in their free time are to give importance to their health, to develop social and friendship relations, to feel strong, to love sports and to get away from the complex structure of life. When the demographic characteristics of the participants are examined, it was found that the reasons for doing sports in the leisure of the students participating differed significantly according to the gender variable. It can be thought that the main reason behind the differentiation of students' leisure constraints according to gender lies in the fact that male and female students' purposes of participating in leisure activities and their satisfaction levels differ from each other. In the studies previously maintained in the literature on this subject, it has been found that university students' expectations of sports and their purposes of doing sports are different from each other according to the sports branches they are interested in, but the reasons for participating in sports as a leisure activity do not differ according to gender. Similar studies related to research were examined and it was seen that students who are in the athletics teams of universities, it was found that the reasons for doing sports did not differ according to gender (Yılmaz, 2011). In addition to this, university students' reasons for participating in leisure activities differ

significantly according to the gender factor (Müderrişođlu & Uzun, 2004). Altergoot & McCreedy (1993), Moccia (2000), Demir & Demir (2006) stated that gender plays an important role in choosing leisure activities.

According to the findings obtained from the research, among the university students participating in this research, the lack of facilities and transportation problems are the leading leisure constraints. It has been determined that other leisure constraints are lack of knowledge, individual psychology, lack of time and interest, respectively. It was concluded that the leisure constraints, which was seen at the lowest level among the students participating in the research, was the lack of friends.

Environmental factors are the leading factors limiting participation in leisure activities (Troost et al., 2002) In the similar study conducted in the literature on university students showed that although they study in different cities and universities the main factors for leisure constraints are generally similar. In the study conducted by oruh & Karakucuk (2008), The focus was to examine the recreational tendencies of university students and the factors that prevent them from participating in recreational activities. At the end of the research, it was seen that the main barriers to students' participation in leisure activities were lack of interest and lack of facilities. Another study carried out by Kiper (2009), aiming at examining the barriers to participation in leisure activities of Namık Kemal University Faculty of Agriculture students in which 1148 students participated, it was determined that the students had adequate time to participate in leisure activities, and the lack of interest was the leading leisure obstacle. In the same study, it was indicated that the student's participation in leisure activities was low due to financial inadequacies and they had to involve passive leisure activities. Özdilek et al. (2007) Dumlupınar and Sakarya universities students in the study on the reasons for participation in leisure time activities, students are encouraged to participate in these activities, especially economic inadequacies facilities, programs, and guidance reasons such as the limited number of experts to do as a result, they stated that they could not do this. In another study by Demirel and Harmandar (2009); It has been revealed that the biggest obstacle in participation in leisure time activities is the social environment and lack of knowledge.

It was determined that the university students participating in this study did not differ significantly according to gender in the sub-dimensions of lack of friends and lack of facilities of leisure constraints. On the other hand, it was found that students' leisure constraints differed significantly according to gender in the sub-dimensions of lack of time and interest, individual psychology, lack of knowledge and transportation problems. When the results obtained were evaluated, it was determined that female students had higher scores on the sub-dimensions of lack of time and interest, individual psychology, lack of knowledge and transportation problems when compared to male students. According to these results, it was found that leisure constraints were more common in female students when compared to male students. It can be thought that the basis of the differentiation of leisure constraints of the students participating in the research according to gender variables is the difference in the attitudes of male and female students towards leisure activities and their expectations from each other. The results of the research in the literature show that the attitudes of male and female university students towards leisure activities are different from each other (Akyüz & Türkmen, 2009). When the findings are examined, it has been found that the students in the 18-20 age groups have more transportation problems than the students in the 21-23 age groups, as a leisure constraint considered. In the emergence of this result, it can be considered that the students in the younger age group are in the first years of university life and their level of knowledge about recreation areas and transportation opportunities in the regions is low. In contrast, it was found that the level of restriction of students' participation in leisure activities are mainly caused by lack of

time and interest, lack of individual psychology, lack of knowledge, lack of facilities, and lack of friends did not differ according to age groups.

RESULT

- It has been determined that the barriers to participation in leisure activities in university students who constitute the sample group of the research showed some differences according to the gender of the students.
- It was found that the frequency of doing sports for "Getting rid of the boredom and stress" and "Acquiring new skills and using them" in the university students participating in this study differed significantly according to their gender, and the other factors that were nominal in the students' orientation to sports in their free time are nonsignificant according to gender.

Limitations and Recommendations

It was found that problems such as transportation and lack of facilities are the main factors that prevent the university students from participating in leisure activities. As it is known, university students spend most of their time in classes and courses to improve themselves. In this context, it is known that students in many departments of universities have a sedentary lifestyle. Having a sedentary lifestyle is likely to lead to some health problems for university students as well as in individuals from all age groups. At this point, indoor and outdoor recreation areas can be allocated for the benefit of university students. Hence, it will be possible for university students to use their free time more actively.

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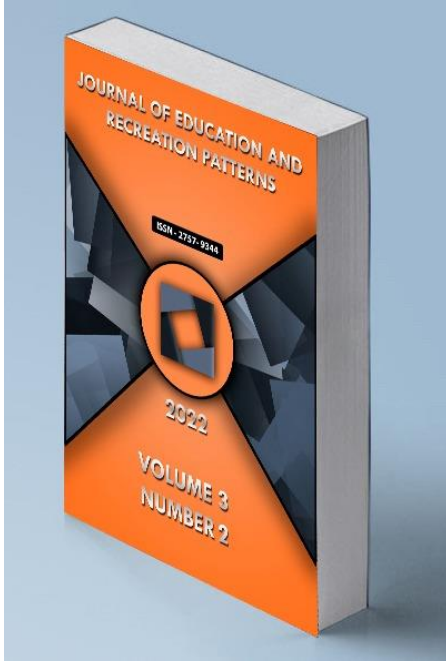
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The Effect of Different Massage Protocols on Running-Based Anaerobic Sprint Test Performance During and After Ramadan

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ABSTRACT

Purpose: Different methodologies are applied to increase the performance of athletes in sports involving high-intensity activities. Some of these methodologies can be listed as massage applications used before sports activities and listening to music. Listening to music with pre-competition massage treatments can have an impact on performance, but the effect of massage and listening to music during and after Ramadan may arouse curiosity. The aim of this study is to determine the effect of massage and massage + music protocols applied during and after Ramadan on Running-Based Anaerobic Sprint Test Performance (RAST).

Methods: Twenty athletes (age, 21.30± 1.49 years; height, 175.10± 2.51 cm; 74.50± 2.79 kg; BMI 24.30±.75) who exercise regularly participated in the study. The study was carried out using four different protocols during the month of Ramadan (massage/massage+music) and after (massage/massage+music) after a 5-minute warm-up at 72-hour intervals. RAST was applied after massage applications and maximum, minimum, average power and FI values were evaluated after RAST.

Results: It showed that ARMM protocol values were more effective than RM, ARM and RMM protocols.

Conclusions: Massage+listening to music before performing RAST can be recommended to coaches and athletes.

Keywords: Fasting, Massage, Music, Running Based Anaerobic Sprint Test



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INTRODUCTION

Muslims are required to abstain from eating, drinking, smoking, and even sexual activity from sunrise to sunset during the month of Ramadan, which is one of the five most essential rules (five conditions) of Islam and the holiest month of the year (Roky et al., 2004; Chaouachi et al., 2009; Waterhouse, 2010). Since Ramadan fasting involves abstinence from food and drink for approximately 13-18 hours every day for 29-30 days (Azizi, 2010; Mosaferchi et al., 2020), changes in nighttime sleep duration and sleep patterns (Taoudi et al., 1999; Margolis & Reed, 2004), general fatigue that may occur during daily physical activity (Ben Salama et al., 1993), abnormalities in the immune system, hypohydration, and decreased psychomotor performance can be observed (Chamari et al., 2019). Although some researchers reported that fasting causes a decrease in physical performance (Zerguini et al., 2007; Meckel, Ismaeel, & Eliakim, 2008; Wilson, Drust, & Reilly, 2009a; Chtourou et al., 2011a), fasting did not observe significant performance decreases (Gueye et al., 2003; Karli et al., 2007; Chaouachi et al., 2009; Ferguson et al., 2009). For example, Zerguini et al., (2007) stated that more than 70% of professional football players had a negative impact on their training and performance during fasting, while Kirkendall et al., (2008) stated that football players had little effect on their physical performance during fasting. Along with determining the aerobic and anaerobic capacities of the athletes by the trainers and sports scientists, one of the most important conditions is to maximize their current capacity. For example, after the resistance training program applied to the athletes, there was an increase in the sprint capacity and anaerobic power of the athletes (MacDougall et al., 1977; Slade et al., 2002; Chromiak et al., 2004; Pennington, 2021), in addition, after electromyostimulation (EMS) training as a different training model It has also been stated that there is an increase in anaerobic capacity (Miyamoto et al., 2016). In addition to the applied training programs, one of the most important applications used by the athletes in order to increase the current capacity is massage. Massage is widely used to contribute to the increase in performance before and after exercise (Ogai et al., 2008; Arroyo-Morales et al., 2011). Studies have shown that massage facilitates performance after anaerobic running and is effective in removing lactic acid after anaerobic exercise (Micklewright et al., 2005; Budak et al., 2020). In addition, depending on the content of the studies carried out, besides the development of the physical capacity of the athletes, it also contributes to the psychological optimum performance. For example, the use of music in the field of exercise, which has features such as increasing attention capacity, changing and raising mood, and increasing work efficiency, is increasing (Terry et al., 2006; Brooks & Brooks, 2010; Hutchinson et al., 2011; Rad & Hafezi, 2013). Methods such as warming up, stretching, music and visual feedback before competitions are essential to improve athletic performance. Many athletes like to listen to music and train at high intensity while warming up (Castañeda-Babarro et al., 2020). Music is an external resource that can be used to increase the ergogenic effect of a wide variety of exercise modes and intensities (Nakamura et al., 2010; Ballmann et al., 2018). Additionally, it has been shown that changes in mood, motivation, warm-up rate, and arousal of music can result in performance gains (Hayakawa et al., 2000; Ballmann et al., 2018). However, it is not known how preference affects the above-mentioned mechanisms, especially during anaerobic exercise. Predetermined music use was used to study the association between music and anaerobic exercise, with varying degrees of success (Pujol & Langenfeld, 1999; Simpson & Karageorghis, 2006).

Although both music and massage are frequently employed by athletes, they have differing benefits on performance. Regarding the performance parameters of the athletes during Ramadan, it is clearly evident that there are varied results. The effects of massage and massage accompanied by listening to music during and after Ramadan can be studied by trainers and sports scientists. As a result, the purpose of this study is to look at how applying massage and

massage combined with listening to music can affect RAST performance both during and after Ramadan.

METHOD

Participants

The power analysis program G*Power (version 3.1.9.3, Germany) was used to determine the study group. As a result of the power analysis (confidence interval=.95, alpha value=.05 and beta value=.80, and effect size value=.60) it was determined at least 12 athletes who regularly exercise should be included in the study (Faul et al., 2007). According to the World Health Organization (WHO) criteria, the 18-25 age group (age, 21.30± 1.49 years; height, 175.10± 2.51 cm; 74.50±2.79 kg; BMI 24.30±.75) who regularly exercise and in the study regularly participate 20 people participated (WHO, 2020). The inclusion criteria for study participants were as follows: (a) performing regular exercise (at least 150-300 minutes of moderate-intensity physical activity per week or at least 75-150 minutes of vigorous aerobic physical activity); (b) not having a history of disability that would affect the result of the study; (c) ensuring regular participation in the study; (d) obeying the investigators' commands throughout the course of the study; and (e) not having a known skin allergy. The exclusion criteria were as follows All of the people who volunteered to take part in the research were provided with the pertinent information regarding the requirements and potential dangers associated with the study, and they all signed a document indicating that they did so of their own free will. During the course of the study, participants were given the directive to continue their normal level of physical activity; however, they were advised to refrain from engaging in any severe activities for the preceding twenty-four hours. During the course of the research project, the people who agreed to take part were given the strict directive not to use any kind of medication, including anabolic steroids, other hormones, metabolic modulators, diuretics, non-steroidal anti-inflammatory medications (NSAIDs), etc. Before beginning the investigation, the appropriate consent was received from the Malatya Inonu University Non-Invasive Clinical Research Ethics Committee (Ethics Committee Protocol Number: 2022/3535).

Experimental Design of the Study

Participants in the study were all compiled into one group to begin with. In total, four distinct massage protocols were used for the measurements, and each procedure was separated by a rest period of 72 hours. These massage regimens were utilized before, during, and after the holy month of Ramadan (Bowers, Foss, & Fox, 2012). The findings of previous studies suggest that the benefits of Ramadan on sprint performance may last for at least two weeks after the end of Ramadan even if the holy month of fasting has ended (Girard & Farooq, 2012; Boukhris et al., 2022). Because of this situation, the study was carried out in the middle of Ramadan (on the last 15 days) and two weeks after Ramadan in order to ensure the sufficient effect of the month of Ramadan in the people who participated in the study. After the massage, the Running-Based Anaerobic Sprint Test (RAST) (6x35m) measurements of the participants were taken. All protocols were performed at the same time of the day (15:00-17.30) in order to avoid the effects of the circadian rhythm and to be the hours when the effect of Ramadan fasting increased (Souissi et al., 2004). Protocols created accordingly;

- a) **Time of massage during Ramadan (RM)**; RAST measurements after 5 minutes of jogging (40% HR) and 10 minutes of massage,
- b) **Massage+listening to music during Ramadan (RMM)**; RAST measurements after 5 minutes of jogging (40% HR) and 10 minutes of music+massage,
- c) **Massage time after Ramadan (ARM)**; RAST measurements after 5 minutes of jogging (40% HR) and 10 minutes of massage,

- d) *Massage+listening to music after Ramadan (ARMM)*; RAST measurements after 5 minutes of jogging (40% HR) and 10 minutes of music+massage.

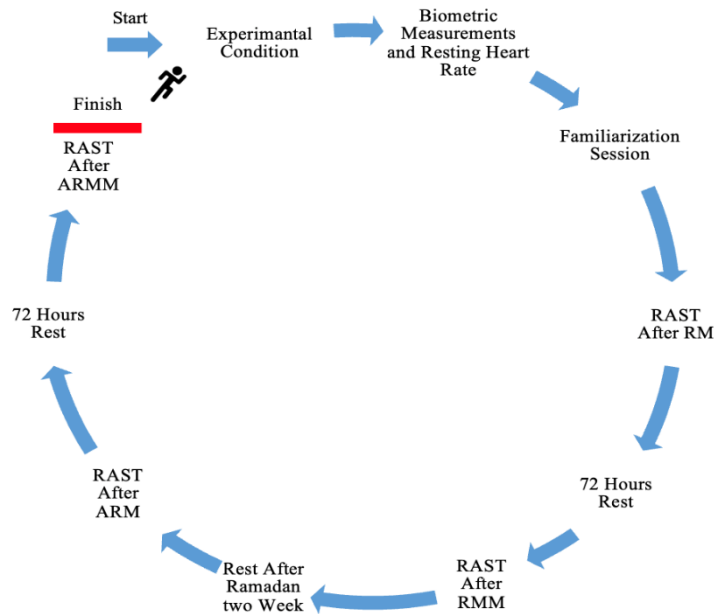


Figure 1. Experimental Design

Anthropometric Measurements

The volunteers' (SECA® GmbH, Hamburg, Germany) ankles, calves, hips, scapulae, and head were measured while they stood barefoot and against a wall. Frankfurt's scale model had a head position indicator and a height gauge that activated with each exhale. Participants weighed themselves while wearing minimal clothing (Toledo 2096 PP, So Bernardo do Campo, Brazil). BMI was determined by dividing weight (in kilogrammes) by height (m²) (Sales et al., 2018).

Running-Based Anaerobic Sprint Test (RAST)

Minimum, maximum, average power (W), and fatigue index (FI) are all components of the RAST test, which measures an athlete's anaerobic performance capacity. The test entails six maximal sprints of 35 metres separated by 10-second rest intervals (Zagatto, Beck, & Gobatto, 2009). As a result of the test, W and FI were calculated as previously suggested (Buchheit, 2005). Maximum, minimum, and average power levels as well as FI values were determined by the computations. All measures were taken within a gym to eliminate the possibility of ambient influences influencing research subjects' performance. During the trial, the temperature ranged from 18 degrees to 200 degrees Fahrenheit, and there was no breeze. Participants' RAST values were recorded using infrared photocell gates (Witty, Micro Gate System, Mahopac, NY, USA) spaced at 35-m intervals, with the test administered following a series of massage procedures. In order to reach the highest values during the test (Andrade et al., 2015; Sales et al., 2018), verbal motivational support was given to the participants during each run (35m).

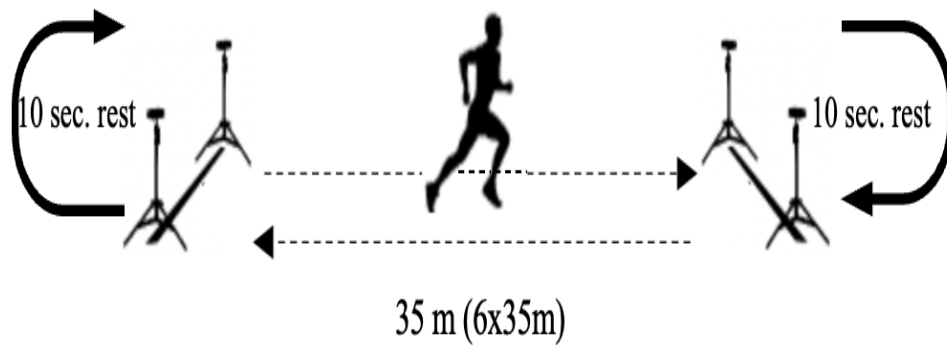


Figure 2. Scheme of RAST procedures.

Massage Protocols

Researchers used four distinct Swedish massage techniques on the study's athletes, and each was assessed independently. A minimum of 72 hours of rest was allowed between massage methods used before, during, and after Ramadan (Bowers et al., 2012). Before each massage, the massage bed was disinfected with a wipe and a new disposable cover was placed on top. The temperature in the massage room was just right (22-26⁰). So that there wouldn't be any unintentional stimulation for the participants, no strong-smelling scents were employed in the room. About 15 millilitres of traditional baby oil were used to massage each athlete. All massage protocols were applied for 10 minutes after a 5-minute warm-up run. Due to the high intensity of RAST in the music+massage protocols, only up-tempo music (>120 - 140 bpm) was played. Music selection criteria were determined according to the five recommendations of Karageorghis et al., (2009) in their study (Karageorghis et al., 2009). While applying the massage, the massage was performed in the direction of the heart and muscle fibers by using eufluorage, friction, petrissage, and pressing applications (Weerapong, Hume, & Kolt, 2005; Aak & ncü, 2006; Gürkán, 2018; Jelvéus A, 2011). In order to ensure consistency between massage applications applied to different people, massage applications were performed by three masseurs who received the same training and carried out similar studies together. In order to ensure consistency between the protocols, the same people were massaged by the same masseurs.

Statistical Analysis

Two-way repeated measures ANOVA test was used in the study, the first factor being Ramadan (During Ramadan and After Ramadan) and the second factor being massage (massage with and without music). The assumption of normal distribution was examined using the Shapiro-Wilk test. Mauchly's sphericity test was performed for the sphericity assumption. A Greenhouse-Geisser correction for sphericity was used where necessary. Two groups (massage with and without music) were considered as the between-subject factor (group), and two measurements (During Ramadan and After Ramadan) were considered as the inter-subject factor (time). These analyzes were made for Max Power (W), Minimum Power (W), Average Power (W), and Fatigue Index (%) measurements. The results are presented as mean \pm standard deviation. $p < 0.05$ was considered significant. Analyzes were performed using Python 3.9 and IBM SPSS Statistics for Windows version 26.0 (New York; USA).

FINDINGS

Figure 3 shows the changes in the Max Power (W) parameter of the participants. According to the result of the study, a statistically significant difference was found between the Ramadan periods [During vs. After] in terms of Max Power (W) value ($F= 24.14$; $p1 < 0.001$; $np2= 0.73$). In addition, the massage groups [with music vs. without music] were statistically significant in terms of the Max Power (W) value ($F = 23.49$; $p2 < 0.001$; $np2 = 0.72$). The interaction effect (Ramadan period*Massage) was statistically significant for Max Power (W) ($F= 8.68$; $p= 0.016$; $np2= 0.49$).

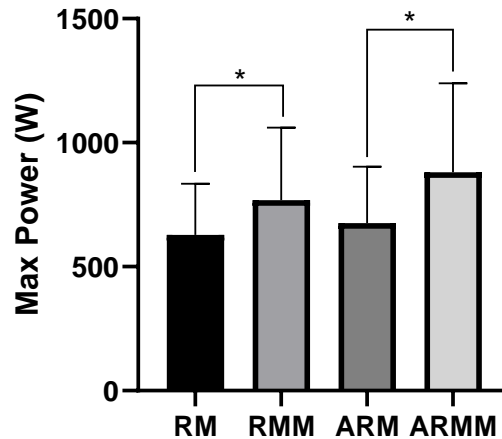


Figure 3. Comparison of the measured values of Max Power (W); *statistically significant p -value < 0.05 .

The changes in the Minimum Power (W) parameter of the participants are presented in Figure 4. According to the result of the study, a statistically significant difference was found between the Ramadan periods [During vs. After] in terms of Minimum Power (W) value ($F= 12.40$; $p1= 0.006$; $np2= 0.58$). The massage groups [with music vs. without music] were statistically significant in terms of the Minimum Power (W) value ($F= 12.10$; $p2= 0.007$; $np2= 0.57$). The interaction effect (Ramadan period*Massage) was not statistically significant for Minimum Power (W) value ($F= 0.024$; $p= 0.88$; $np2= 0.003$).

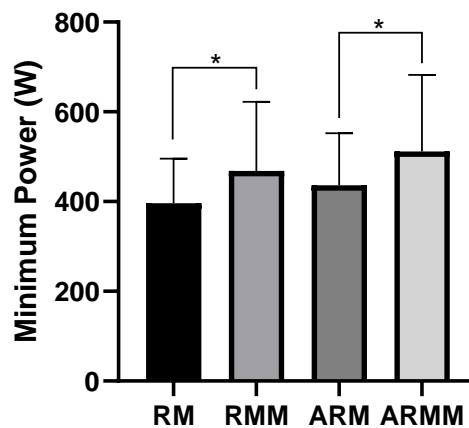


Figure 4. Comparison of the measured values of the Minimum Power (W); *statistically significant p -value < 0.05 .

The changes in the Average Power (W) parameter of the participants are presented in Figure 5. According to the result of the study, there was a statistically significant difference between Ramadan periods [During vs. After] in terms of the Average Power (W) value ($F= 22.87$; $p1= 0.001$; $np2= 0.71$). The massage groups [with music vs. without music] were statistically significant in terms of the Average Power (W) value ($F= 26.97$; $p2= 0.001$; $np2= 0.75$). The interaction effect (Ramadan period**NAP*) was statistically significant for Max Power (W) ($F= 7.92$; $p= 0.02$; $np2=0.46$).

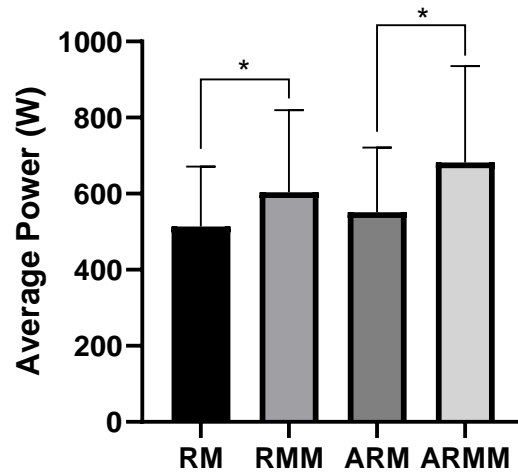


Figure 5. Comparison of the measured values of the Average Power (W); *statistically significant p -value < 0.05 .

Figure 6 shows the changes in the Fatigue Index (%) parameter of the participants. According to the result of the study, there was a statistically significant difference between Ramadan periods [During vs. After] in terms of the Fatigue Index (%) value ($F= 18.63$; $p1=0.002$; $np2=0.67$). In addition, the massage groups [with music vs. without music] were statistically significant in terms of the Fatigue Index (%) value ($F=16.91$; $p2=0.003$; $np2=0.65$). The interaction effect (Ramadan period**Massage*) for Fatigue Index (%) was statistically significant ($F= 5.33$; $p= 0.04$; $np2=0.37$).

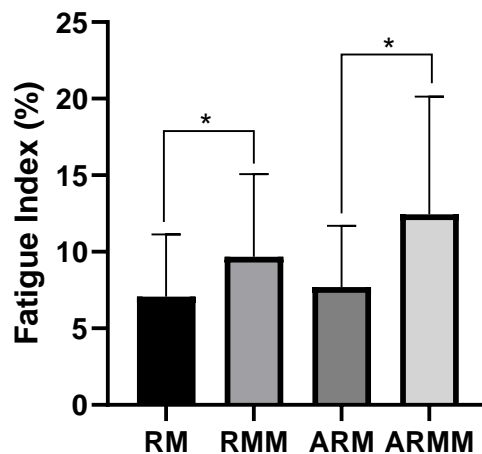


Figure 6. Comparison of the measured values of the Fatigue Index (%); *statistically significant p -value < 0.05 .

DISCUSSION

It is stated that the sprint performance of the athlete in high-intensity activities is important. For this reason, sports scientists are trying to determine the most accurate programs to improve the performance of athletes. For this purpose, different programs are applied to the athletes. It is thought that massage and listening to music, which are among the protocols applied, affect performance indicators. However, the effect of listening to music combined with massage in addition to the applied massage protocols on performance development has not been determined yet. Accordingly, the aim of this study is to investigate the effects of massage and massage + listening to music applied during and after Ramadan on RAST performance. According to the results of the study, the participants' Maximum Power (W) during Ramadan was significantly lower than after Ramadan. In addition, the Maximum Power (W) value was higher in the group that received massage + music compared to the group that was only massaged, and this increase was statistically significant. The Ramadan * massage interaction was statistically significant for the Maximum Power (W) value. The interaction results showed that massaging with music after Ramadan will positively affect the Maximum Power (W) value. Participants' Minimum Power (W) was significantly lower during Ramadan than after Ramadan. It can also be said that massaging with music increases the Minimum Power (W) value. However, the Ramadan * massage interaction was not significant for Minimum Power (W). The Average Power (W) value during Ramadan was also significantly lower than after Ramadan. Also, massage+music increased the Average Power (W) of the participants. The Ramadan * massage interaction was significant for the Average Power (W) value. This interaction effect showed that massaging after Ramadan and with music would increase the Average Power (W) value. Participants' Fatigue Index (%) during Ramadan was also significantly lower than after Ramadan. In addition, the Fatigue Index (%) value was higher in the group that was massaged with music than in the group that was massaged without music. The Ramadan * massage interaction was statistically significant for the Fatigue Index (%). The results showed that massage with music after Ramadan will increase FI (%).

As far as we know, there is no other study that tests and compares the effect of massage protocols applied during and after Ramadan on the same group of athletes. Implementation of this procedure in the current study allows each massage protocol to produce different physiological and performance results. According to the findings of our study, it was determined that massage + listening to music after Ramadan had a positive effect on RAST performance. Although this study is the first to examine the acute effect of massage + listening to music applied to athletes during and after Ramadan, our findings are consistent with studies with similar characteristics examining the effects of massage on sprint performance. But there are studies that massage does not have a positive contribution speed and sprint performance to. For example, it has been determined that massage does not prevent speed performance but can be psychologically beneficial for athletes (Peña et al., 2014), aromatherapy massage applied to futsal athletes contributes to sprint performance (Bayer & Eken, 2022). Furthermore, sports massage application positively affects the power values of athletes (Peña et al., 2014; Bayer & Eken, 2021). However, in another study, massage has negative effects on speed and reaction time (Arabaci, 2008), massage applied to increase sprint performance does not significantly benefit sprint performance (Dafydd, 2012), and the effectiveness of pre-competition massage applications is controversial (Moran, Hauth, & Rabena, 2018). When the studies are examined, it can be stated that the source of the differences between the results obtained is different sample groups, the time when the measurements are made or the individual differences between the people who apply the massage.

There are no studies on the effect of listening to music before exercise during and after Ramadan on performance development, but the effect of listening to music before exercise is

consistent with our study results. In a study, it was stated that listening to music will increase performance speed, and listening to higher tempo music (example of Brohmer & Becker, 2006) will increase speed more (Jamshidzad et al., 2018). Koç et al., (2009) examined the effect of music on WAnT performance in 14 male and 6 female subjects under three conditions: slow music, fast music, and no music. They found higher power outputs in both fast and slow music conditions than in no-music conditions (Brohmer & Becker (2006) study, 17 subjects were tested for Wingate performance under conditions with and without music. Accordingly, it shows that music can physiologically improve anaerobic exercise performance. According to Eliakim et al. (2007), examined the effect of listening to music during warm-up on anaerobic performance in elite national level adolescent volleyball players. They noted that music affects warming and may have a temporary beneficial effect on anaerobic performance. Chen et al., (2022). studied an interactive music tempo control with closed-loop heart rate feedback to improve an athlete's physio-psychological states. According to the results of the study, listening to interactive music has a significant effect on heart rate and perceived effort (RPE) level in basketball players who listen to asynchronous music or not at all during the activity. However, Atan (2013), examined the effect of music listening and rhythm on anaerobic exercise, and as a result, he stated that listening to music and rhythm did not increase anaerobic performance. Szabo et al. (1999), did not find a significant difference between slow and fast music in terms of exhaustion time for maximal cycling exercise. Rad & Hafezi (2013), stated that there is no ergogenic benefit of music at 100 m swimming speed. It can be said that the source of the differences between the study findings is the differences in the music tempo, the type of sample or the time intervals in which the study was conducted.

It was determined that RAST values during Ramadan were not effective compared to post-Ramadan values. Our results are similar to the results of the studies in Ramadan. For example, Zerguini et al. (2007), reported an overall decrease in soccer players during Ramadan after tests of speed, agility, dribbling and endurance. Meckel et al. (2008), reported that the performances of 3000 m running time, 6 × 40 m running time and vertical jump tests adversely affect young football players in Ramadan. Wilson et al. (2009b), showed that sprinting ability or agility in football players is affected by Ramadan fasting. Nizar Souissi et al. (2007), showed that the effect of time of day on anaerobic power variables tended to disappear during Ramadan during strength speed and Wingate tests. While it did not show any change in the morning performance of the people participating in the study during the Ramadan fast, it impaired the afternoon and evening anaerobic performance. Regarding the anaerobic performances, the performance of the football players during the repeated sprint ability (RSA) and Wingate tests during Ramadan showed a significant decrease (Chtourou et al., 2011b). Hamouda et al. (2012), stated that during the 5×6 s RSA test during Ramadan, athletes showed a significant decrease in Peak Power.

CONCLUSION

In conclusion, our research demonstrates that fasting during Ramadan has a negative impact on anaerobic performance, especially during periods of intense hunger. Nonetheless, the results demonstrate that massage combined with listening to music (120-140 rpm) has a beneficial effect on anaerobic performance both during and after Ramadan. After all these research results, the effect of massage + listening to music on exercise performance is an undeniable fact. In addition to the results of this study, the inclusion of different sample groups in the study or the examination of the effect of listening to massage + music at different times of the day in Ramadan may contribute to the relevant literature and the field of sports science.

Limitations and Recommendations

There are limitations to be considered when interpreting this study's results. Not one RAST test from before, during, or after the holy month of Ramadan was compared to any other. Furthermore, regulating nutritional (calorie) differences between Ramadan and the subsequent months was impossible.

Acknowledgements

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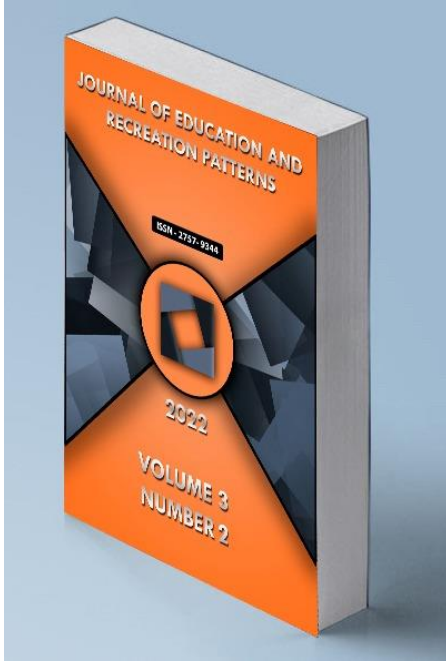
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Unemployment Anxiety and Hopelessness in University Students

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Unemployment Anxiety and Hopelessness in University Students**Yahya Gökhan YALÇIN¹****ARTICLE INFORMATION**

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Volume: 3, No: 2**Pages:** 130-146**ABSTRACT**

This study aims to examine the Unemployment Anxiety and Hopelessness levels of senior students of the Faculty of Sport Sciences. While the population of the study consists of senior students of the faculty of sports science, the sample group consists of 732 senior students, 209 women and 523 men, studying at Sports Sciences Faculties of Selçuk University, Niğde Ömer Halis Demir University, Aksaray University, Düzce University and Bursa Uludağ University. Ethics Committee approval no.145 was obtained from the "Selçuk University Faculty of Sports Sciences Non-Interventional Clinical Research Ethics Committee" for the study. While the personal information form created by the researcher was used to obtain socio-demographic data, the "Unemployment Anxiety" scale prepared by Ersoy-Kart and Erdost (2008) to measure the perceptions of students about being unemployed was used to determine unemployment anxiety. The scale was composed of psychometric questions prepared by Dursun and Aytaç (2009) in line with the relevant literature to determine the unemployment anxiety levels of students. Tekin Tayfun and Korkmaz (2016) used these psychometric questions and created a 25-item unemployment anxiety scale. The Beck Hopelessness Scale, which was developed by Beck et al. (1974) to measure the individual's negative perspectives towards the future, was used to determine hopelessness levels. The variance and homogeneity of the data were tested, the Independent Samples t test was used for pairwise comparisons, the One Way Anova test was used for multiple comparisons, and the Tukey HSD test was used to determine the source of difference. It was determined that the value of men in the dimension of environmental pressure depending on the gender factor was statistically higher than the value of women ($p<0.05$), and the change in other dimensions was not statistically significant. While it was found that the hopelessness value of women was statistically higher than the value of men ($p<0.05$), no statistical change was observed in the dimensions of unemployment anxiety and hopelessness depending on the age, economic status and field of study. In the light of these findings, it can be said that men have more unemployment anxiety, while women experience hopelessness at a higher level than men.

Keywords: Anxiety, Hopelessness, Sport, Unemployment

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INTRODUCTION

University students make up a large part of the young population. In our country, there are more than a hundred schools and faculties affiliated to state and private universities that provide sports education. Although they are divided into different departments in some faculties and schools, thousands of students have the opportunity to receive 4-year sports education in the departments of Physical Education and Sports Teaching, Sports Management, Recreation and Coaching Education. Graduates have many different career choices and employment areas, which include working under contract in health, culture and sports departments or in the units affiliated to the ministry of sports, working as academicians at universities, as coaches in private and public institutions and organizations and as teachers in state, private and military schools. There are also job opportunities in various branches of the clubs such as being a coach, conditioner, analyst, masseur. It is also possible to have professions that require special education and skills such as sports manager, sports operator, recreationist. Creating more opportunities and resources for these schools, where high-quality sports people and managers are trained, will also form the basis of a healthy society and sports culture.

People need a job to survive and meet their basic needs, and the concept of job means much more than earning money to ensure the continuity of life. Job is expressed as activities carried out in a workplace by revealing professional knowledge and skills (Usluer, 2005). Individuals may experience physical and mental problems when the preservation of the current job poses a problem and job security disappears. It is reported that according to Dökmen (1989) young people who have just started university experience problems in adapting to dormitory life, while senior students are concerned about the future and finding a job (cited by Koç and Polat, 2006). Gök (2015) defines unemployment as the inactivity of individuals to use their physical and mental powers for whatever reason. Unemployment is more complex than being a single issue. Işığışok (2019) reports that unemployment also leads to many economic, social and psychological problems. It is the uncertainty about finding a job that causes university students to experience psychological effects such as anxiety and hopelessness (Tekin Tayfun & Korkmaz, 2016).

The WESO Trends report indicates that in 2022, the global workforce participation rate is expected to be 1.2% points lower than in 2019, pointing to significant differences in the impact of the crisis on workers and country groups (www.ilo.org, 2022). In Turkey, in addition to the unemployed in the 15-34 age group, 10,350,000 young people are not included in the workforce, 734,000 university graduates are unemployed, and 1,214,000 graduates are not considered in the workforce (Unemployment and Employment Report, 2022). In the Global Employment Trends report, ILO (2008) states that youth unemployment is 3 times higher than adult unemployment. This figure is an indicator of how big the youth unemployment problem is.

Kelleci and Türk (2016) state that youth unemployment includes individuals between the ages of 15-24 who have the will and power to work, but can not find a job they want despite their search. The concept of youth and age classification may differ in many countries. Many different variables such as socio-cultural structure, social roles, economic structure and educational inadequacies can be seen as the reason for this difference. Yentürk and Başlevent (2007) report that youth in Turkey covers the age range of 15-29 depending on various factors. In underdeveloped countries, individuals who have to start working during their childhood and youth may experience great problems in completing their education and realizing themselves. Job and employment are very important factors for individuals to shape their individual and social identities and regulate their lives, incomes, self-esteem, socio-economic status and

political positions (Calderon, 2004). According to the International Labour Organization, the youth population (15-24 years old) increased from 1 billion to 1.3 billion between 1999-2019, but the number of young people participating in employment decreased from 568 million to 497 million, and young people are 3 times more likely to be unemployed than adults aged 25 and over. The fact that young people are trained in an area of their own interests and have a suitable profession accordingly will be the basis of a happy and peaceful society. After graduating, young people cannot find a job they do not like but have to do, let alone doing a job they love. This causes young people to experience not only economic but also socio-cultural and psychological problems.

In the general sense, anxiety includes events that have not yet happened, and worries and concerns about the future. The idea of confronting a danger that has no specific reason can cause anxiety and tension (Cüceloğlu, 1996). Tang and Gibson (2005) define anxiety as a subjective emotion that is uncertain, develops out of control, and arises from the evaluation of threats to possible harm that may occur in the future. Paolini et al (2006) report that anxiety is associated with many different negative emotional experiences such as depression, loneliness, difficulty in recognizing and evaluating emotions, social distance, general emotional distress, and low satisfaction with life. Kaya and Varol (2004) point out that anxiety can show psychiatric symptoms such as fear, insecurity, restlessness, panic and confusion in addition to physical symptoms. Çakmak and Hevadanlı (2005) state that the increase of anxiety causes the individual not to know how to deal with the future and to remain indecisive. Therefore, negative emotions and behaviors of individuals should be kept at a controllable level and should not turn into negative behaviors.

Hopelessness is regarded as a state that includes the expectation of a negative rather than a positive outcome in the future (Abramson et al., 1989). Abela and Paybe (2000) report that the first symptoms of hopelessness are lack of motivation and sadness, while the secondary symptoms are negative thoughts such as suicidal ideation, low energy, psychomotor disorders, sleep disorders, inattention, and low self-perception. In this critical period when university students face orientation problems and look for solutions to social, cultural and psychological problems, they also have to seek solutions to problems such as future anxiety and finding a job.

In addition to its importance mentioned above, the transition to university is generally called a critical period because it is a difficult and complex process in terms of personal, social and academic aspects (Aladağ, Kağnıcı, Tuna, & Tezer, 2003).

Although it is seen that unemployment is divided into different classes and groups in the literature, it is considered as the concept of open and hidden unemployment in the most general sense. While open unemployment is defined as the individual's desire to work and inability to find a job despite his efforts (Uyar Bozdağlıoğlu, 2008), hidden unemployment is the unemployment of people who apparently work but work below normal due to avoidable or unavoidable reasons, in other words, the unemployment of people working with low efficiency (Zaim, 1997).

It would not be wrong to say that sports is an industry today. Sports sector includes many different elements and units such as athletes, coaches, assistant coaches, managers, conditioners, match and competition analysts, masseurs, physiotherapists, sports organizers, media and its elements, training programmers and employees of sports units at universities, private institution personnel, equipment and material providers and the personnel of this sector, employees in sports facilities and fields, sponsors, marketing services and their employees. In order to provide employment based on merit and competence in such a wide area, it is a necessity to determine the job descriptions and qualifications of all units. Mumcu et al. (2019) emphasize that the sports industry has a direct relationship with sectors such as education,

media, textile, tourism, wellness, health and entertainment, and also indirect relationship with sectors such as automotive, yachting, construction trade, electronics, and landscaping, and state that it provides employment on a large scale. Although it covers such a wide area, the employment problem of the workforce trained in sports fields is an issue that needs to be solved. Negative situation expectations related to the thought that university students cannot do their own professions and that different factors will prevent this may cause them to despair. Taşmektepligil et al. (2009) report that the job opportunities of individuals studying at universities that meet the personnel needs in the sports sector in Turkey are decreasing. Being aware of the employment areas and job opportunities that will be provided to the young people who receive sports training will pave the way for the creation of an environment that will enable them to make conscious choices. Increasing the scope and number of studies in this field is thought to contribute to the prevention of unemployment in the field of sports. It is thought that this study, which aims to examine the Unemployment Anxiety and Hopelessness levels of the senior students of the Faculty of Sport Sciences, will shed light on studies in different scopes and dimensions and contribute to the prevention of unemployment in the field of sports.

METHOD

The population and the Sample Group of the Study

While the population of the study consists of senior students of the faculty of sports science, the sample group consists of 732 senior students, 209 women and 523 men, studying at Selçuk University, Niğde Ömer Halis Demir University, Aksaray University, Düzce University and Bursa Uludağ University Sports Sciences Faculties. The accessibility of the universities included in the study was taken as a basis in the selection of the sample, and it was determined that the total number of students was sufficient for the sample group and compatible with the questions of the scale.

Data Collection Tools

While the personal information form created by the researcher was used to obtain socio-demographic data, the Unemployment Anxiety Scale was used to determine unemployment anxiety, and the Beck Hopelessness Scale was used to determine the change in hopelessness dimensions.

Unemployment Anxiety Scale

The "Unemployment Anxiety" scale prepared by Ersoy-Kart and Erdost (2008) to measure students' perceptions of being unemployed was used in the study. The scale was composed of psychometric questions prepared by Dursun and Aytaç (2009) in line with the relevant literature to determine the unemployment anxiety levels of students. Tekin Tayfun and Korkmaz (2016) used these psychometric questions and created a 25-item unemployment anxiety scale. The scale was examined in 4 dimensions: personal pessimism and lack of self-confidence (first 5 items), social pressure (8 items), lack of qualitative knowledge and skills (4 items) and difficulties in employment (8 items).

Beck Hopelessness Scale

It is a self-assessment type scale developed by Beck et al. (1974) to measure an individual's negative perspectives towards the future and adapted into Turkish by Seber (1991). The scale consists of 20 questions and 3 factors as “feelings and expectations about the future”, “loss of motivation” and “hope”. The statements in the scale are answered as yes or no and are scored as 0-1. Each answer that matches the key gets 1 point, and each answer that doesn't match the key gets 0 points. The scale score that can be achieved is in the range of 0-20 and indicates the hopelessness score of the person. If this score is high, it is accepted that the level of hopelessness of the individual is high (Seber & Dilbaz 1993; Durak & Palabıyıkoglu 1994).

Data Collection and Statistical Analysis

Variance and homogeneity of the data were tested, Independent Samples t-test was used for pairwise comparisons, One Way Anova was used for multiple comparisons, and Tukey HSD test was used to determine the source of difference. The significance level was accepted as 0.05.

FINDINGS

In this section, statistical evaluation of the data was made and the results of the evaluation were shown in tables.

Table 1. Changes in Unemployment Anxiety Dimensions Depending on Gender Factor

Gender	n	%	Personal Pessimism		Social Pressure		Qualitative Knowledge and Skills		Employment		General Unemployment	
			x	Sd	x	Sd	x	Sd	x	Sd	x	Sd
Woman	209	28,55	3,65	0,63	3,60	0,46	3,73	0,70	3,74	0,49	3,68	0,31
Man	523	71,45	3,67	0,69	3,69	0,48	3,71	0,66	3,72	0,42	3,70	0,29
Total	732	100	3,66	0,67	3,66	0,48	3,71	0,67	3,73	0,44	3,69	0,29
t			-,459		-2,486		,520		,421		-,979	
p			,634		,012 *		,593		,654		,312	

*p<.05

As can be seen in Table 1, it was determined that the value for men in the social pressure dimension is statistically higher than the value for women (p<0.05), and the change in other dimensions is not statistically significant.

Table 2. Changes in Hopelessness Dimensions Depending on Gender

Gender	n	%	Feelings about the Future		Loss of Motivation		Future Expectations		General Hopelessness	
			x	Sd	x	Sd	x	Sd	x	Sd
Woman	209	28,55	3,92	0,97	6,49	1,11	4,15	0,79	14,56	1,58
Man	523	71,45	3,67	1,00	6,09	1,22	3,82	0,94	13,58	1,78
Total	732	100	3,74	1,00	6,20	1,20	3,91	0,91	13,86	1,78
t			3,163		4,085		4,845		6,971	
p			,001 *		,000 *		,000 *		,000 *	

*p<.05

As can be seen in Table 2, it was determined that the mean values of men in all dimensions of hopelessness dimensions were statistically higher than the values of women ($p < 0.05$).

Table 3. Changes in Unemployment Anxiety Depending on Age

Age	n	%	Personal Pessimism		Social Pressure		Qualitative Knowledge and Skills		Employment		General Unemployment	
			x	Sd	x	Sd	x	Sd	x	Sd	x	Sd
18-23	369	50,41	3,65	0,68	3,69	0,47	3,73	0,63	3,74	0,42	3,71	0,28
24-29	252	34,43	3,67	0,68	3,64	0,48	3,67	0,71	3,70	0,47	3,67	0,31
30 and over	111	15,16	3,68	0,61	3,64	0,48	3,77	0,70	3,74	0,45	3,70	0,29
F			,091		1,171		,979		,542		1,161	
P			,913		,311		,376		,582		,314	

As can be seen in Table 3, depending on age factor no statistical change was observed in the dimensions of unemployment anxiety.

Table 4. Changes in Hopelessness Dimensions Depending on Age

Age	n	%	Feelings about the Future		Loss of Motivation		Future Expectations		General Hopelessness	
			x	Sd	x	Sd	x	Sd	x	Sd
18-23	369	50,41	3,71	1,03	6,17	1,18	3,91	0,93	13,79	1,85
24-29	252	34,43	3,77	0,96	6,27	1,22	3,97	0,88	14,01	1,73
30 and over	111	15,16	3,77	0,94	6,17	1,22	3,80	0,89	13,75	1,62
F			,347		,564		1,302		1,393	
P			,707		,569		,273		,249	

As can be seen in Table 4, no statistical change was observed in the dimensions of hopelessness depending on age.

Table 5. Changes in the Dimensions of Unemployment Anxiety Depending on the Undergraduate Program Factor

Department	n	%	Personal Pessimism		Social pressure		Qualitative knowledge and skills		Employment		General Unemployment	
			x	Sd	x	Sd	x	Sd	x	Sd	x	Sd
Teaching	235	32,11	3,62	0,65	3,66	0,46	3,76	0,70	3,70	0,45	3,68	0,29
Sports Management	165	22,54	3,66	0,73	3,66	0,44	3,68	0,59	3,71	0,42	3,68	0,28
Coaching	188	25,68	3,72	0,66	3,65	0,51	3,75	0,68	3,77	0,44	3,72	0,30
Recreation	144	19,67	3,66	0,65	3,69	0,49	3,63	0,70	3,73	0,45	3,69	0,31
F			,718		,174		1,406		1,073		,781	
P			,542		,914		,240		,360		,505	

As can be seen in Table 5, no statistical change was found in the dimensions of unemployment anxiety depending on the undergraduate program.

Table 6. Changes in the Dimensions of Hopelessness Depending on the Undergraduate Program

Department	n	%	Feelings about the Future		Loss of Motivation		Future Expectations		General Hopelessness	
			x	Sd	x	Sd	x	Sd	x	Sd
Teaching	235	32,11	3,70	0,99	6,17	1,15	3,83	0,90	13,71	1,73
Sports Management	165	22,54	3,72	0,93	6,23	1,20	3,92	0,99	13,86	1,88
Coaching	188	25,68	3,84	1,09	6,30	1,17	4,00	0,88	14,14	1,80
Recreation	144	19,67	3,72	0,96	6,10	1,30	3,92	0,86	13,74	1,68
F			,775		,884		1,172		2,368	
P			,508		,449		,320		,070	

As can be seen in Table 6, no statistical change was found in the dimensions of hopelessness depending on the undergraduate program.

Table 7. Changes in the Dimensions of Unemployment Anxiety Depending on the Economic Situation

Economic situation	n	%	Personal Pessimism		Social pressure		Qualitative knowledge and skills		Employment		General Unemployment	
			x	Sd	x	Sd	x	Sd	x	Sd	x	Sd
High	111	15,16	3,66	0,71	3,74	0,39	3,75	0,60	3,78	0,39	3,74	0,27
Middle	165	22,54	3,66	0,67	3,71	0,44	3,67	0,67	3,73	0,46	3,68	0,29
Low	456	62,30	3,67	0,66	3,63	0,50	3,72	0,69	3,71	0,44	3,70	0,31
F			,026		3,506		,512		1,141		2,240	
P			,974		,31		,600		,320		,107	

As can be seen in Table 7, no statistical change was observed in the dimensions of unemployment anxiety depending on the economic situation.

Table 8. Changes in the Dimensions of Hopelessness Depending on the Economic Situation

Economic situation	n	%	Feelings about the Future		Loss of Motivation		Future Expectations		General Hopelessness	
			x	Sd	x	Sd	x	Sd	x	Sd
High	111	15,16	3,67	0,98	6,07	1,20	3,87	0,88	13,61	1,81
Middle	165	22,54	3,79	0,97	6,21	1,18	3,91	0,91	13,91	1,74
High	456	62,30	3,65	1,07	6,29	1,24	3,95	0,94	13,89	1,84
F			1,474		1,108		,210		1,251	
P			,230		,331		,811		,287	

As can be seen in Table 8, no statistical change was observed in the dimensions of hopelessness depending on the economic situation.

DISCUSSION AND CONCLUSION

In this study, which aims to examine the Unemployment Anxiety and Hopelessness levels of the senior students of the Faculty of Sport Sciences, it was determined that the value of men was statistically higher than the value of women in the social pressure dimension of unemployment anxiety ($p < 0.05$; table 1), while the change in other dimensions was not statistically significant. In the literature, it is possible to find studies reporting that the unemployment anxiety level of men is higher than that of women (Waters & Moore 2002; Dereli & Kabataş 2009; Yüksel, 2003; Üstün et al., 2014; Ghaderi, 2009; Duman et al., 2009; Şahin, 2009; Demir et al., 2020). In this respect, the aforementioned studies are similar to the findings of our study. It is also possible to find studies where the unemployment anxiety of female students is higher than that of male students (Mutevellioğlu, 2010; Dursun & Aytaç, 2009; Karagun & Colak, 2009; Canbaz et al., 2007, Aydın & Çiftel, 2013), and studies which do not report gender-dependent change (Tumerdem 2007; Doğan & Çoban, 2009; Arslan 2007; Özçelik Kaynak & Tuna, 2020). While Waters & Moore, (2002) state that gender is an important factor in the response to unemployment, and that the unemployment anxiety level of male students is higher than that of female students. It is reported that the reason men and women respond differently to unemployment is because men traditionally take on the role of "breadwinner" (Furaker & Blomsterberg, 2003). The responsibilities, roles and status attributed to men and women in the socio-cultural structure can be seen as the reflections of unemployment in different dimensions depending on gender.

In all hopelessness dimensions, the value of women was found to be statistically higher than the value of men ($p < 0.05$; Table 2). Costa & McCrae, (2001) report that the level of hopelessness is higher in adult female individuals. In his research on university students, In this respect, the results of these studies are similar to the findings of our study. Relevant literature includes studies showing that the gender variable has no effect on the hopelessness of individuals (Tercanlı & Demir, 2012; Kashani et al., 1991; Durak & Palabıyıköğlü, 1994; Ottekin 2009; Çelikel & Erkorkmaz 2008) and studies in which the hopelessness level of men is higher than that of women (Özmen et al., 2008; Çelikel & Erkorkmaz, 2008; Rodríguez-Naranjo, Caño 2016; Yıldırım & Keskinliç, 2017; Kula & Saraç, 2017; Özçelik Kaynak & Tuna, 2020). In their study on the factors of hopelessness and loneliness in adolescents, Pavlova & Bannikov, (2015) found that women tend to believe in their future less than men, and they feel more lonely and misunderstood. Bianchin & Angrilli, (2012) report that women have higher biological sensitivity to the negative effects of stressful life events. In this respect, the findings of the studies of Pavlova & Bannikov, (2015) and Biancin Angrilli, (2012) support the results of our study.

In this study, no statistical change was observed in the dimensions of unemployment anxiety and hopelessness depending on the age factor (table 3; table 4). It is seen that literature includes many studies (Ergin 2009; Deveci et al., 2012; Tekin Tayfun & Korkmaz, 2016; Demir et al., 2019) showing that unemployment anxiety does not show a statistical change according to age groups. The aforementioned studies are in line with the findings of our study in this respect. While Demir et al., (2019) did not report a statistical change depending on age groups in their studies on unemployment anxiety and entrepreneurship levels of university students, Özçelik Kaynak & Tuna, (2020) reported statistical changes in unemployment anxiety based on the age factor. It is possible to find many studies in the literature that do not report a change in hopelessness levels depending on age (Atalay 2011; Erol 2018; Özben & Argun, 2003; Charles et al., 1989; Özçelik Kaynak & Tuna, 2020). In this respect, the mentioned studies support the findings of our study. It is seen that there are some studies (Cebeci, 2021; Çavuş, 2016; Pakdemir, 2011; Ağır, 2007) reporting statistical changes in hopelessness levels depending on age in the relevant literature. Factors such as social structure, sample group,

socio-cultural differences can be shown as the reason for the age-related changes in the literature.

No statistical change was observed in the dimensions of unemployment anxiety and hopelessness depending on the department of the students (table 5; table 6). In their study on the hopelessness, self-esteem and loneliness levels of high school students, Baran et al., (2015) reported that the hopelessness and loneliness scores of the students showed significant differences according to school types, gender and family income, and that there is a positive relationship between hopelessness and loneliness levels. Demir et al., (2019) did not report a statistical change in unemployment anxiety values depending on the departments of the students. In their study, Menevşe & Şeker, (2020) reported statistical changes in all sub-dimensions regarding the unemployment anxiety of students in different disciplines. In this respect, the findings of our study are similar to the studies of Demir et al., (2019) and Menevşe & Şeker, (2020). Ilgar & Cihan, (2019) stated that the lack of employment opportunities for graduates of sports sciences may create anxiety for the future in individuals. It is very thought-provoking that individuals studying in the field of sports experience unemployment and anxiety even though this field offers a wide range of jobs and employment. In their study on university students, Ersoy-Kart & Erdost, (2008) reported statistical changes due to differences in education fields. Duman, (2004) pointed out that individuals who graduate from different fields experience different employment problems. Üstün et al., (2014) reported a statistical change depending on the school factor in their study on the hopelessness levels of university senior students about finding a job. In this study, although no statistical change was observed in the dimensions of unemployment anxiety depending on the field of study, it is seen that the average values are higher than similar studies in the literature. Depending on our study findings, it can be said that all of the students who receive sports training experience unemployment anxiety at a high level regardless of the field difference.

It was determined that low-income students had a statistically lower value than middle- and high-income students in the social pressure dimension of unemployment anxiety ($p < 0.05$; Table 7), there was no statistical change in other dimensions, and there was no statistical difference in hopelessness dimensions depending on the income factor (table 8). The literature includes a wide range of studies (Ergin 2009; Akgün et al., 2007; Çakmak & Hevedanlı, 2005; Balkaya 2017; Namdar 2018; Bozkurt 2004; Tekin Tayfun & Korkmaz, 2016; Dereli & Kabataş, 2009) indicating that unemployment anxiety does not depend on income level. Üstün et al., (2014) did not report a statistical change in the level of hopelessness about finding a job among university seniors depending on demographic factors. Young people expecting to be employed in the field of sports have to evaluate the first choice they come across rather than looking for a suitable job in order not to be unemployed, to establish a family and to avoid financial difficulties in the future. Therefore, while evaluating job opportunities, young people can choose a job regardless of whether the job is suitable for their own characteristics and education, rather than not being unemployed and being described as unemployed. Ataçoçuğu & Zelyurt, (2017) reported that in addition to the long periods of unemployment, young people who graduated from the faculty of sports sciences are forced to work outside their field of education and that the subjective factors in the terms and conditions of employment are effective in their unemployment. Young people are worried about having a job in a high position, as well as a job that will satisfy them financially and morally. Ersoy-Kart & Erdost, (2008) reported that young people have to receive financial support from their families due to their unemployment, which leads them to have negative emotions and behaviors. It would not be wrong to say that the requirements and obligations related to the concept of overtime rather than efficiency and quality are hidden in the works that individuals do unwillingly.

Although no statistical change was observed in the hopelessness of the students depending on the income factor, the high average values can be considered as a remarkable result. However, found that there was a positive and significant relationship between the economic situation and the anxiety level of the students. The literature includes many studies indicating that the level of hopelessness is associated with low family income (Özmen et al., 2008; Çelikel & Korkmaz, 2008; Bayrak et al., 2016; Tümkaya, 2005). Şahin (2009) reported that low-income students had higher hopelessness level scores than middle and high-income groups, and Duman et al., (2009) reported that low-income groups had a higher hopelessness average than high-income groups. While Atalay, (2020) found that individuals studying in sports sciences have high anxiety about being employed, Ataçoğlu & Zelyurt, (2017) reported that there is an employment problem in the field of sports and that graduates prefer to endure underemployment rather than being unemployed. The sports industry is a very large sector that feeds itself. Our perspective and respect for sports and professions in the field of sports will increase with the social internalization of sports culture. In the field of Sports Sciences, field transitions should be prevented by making occupational definitions suitable for each field. Arbitrary and political employment practices with certificates issued by organizing short-term courses should be abolished. The sports industry is a very large sector that feeds itself. Our perspective and respect for sports and professions in the field of sports will increase with the social internalization of sports culture. In the field of Sports Sciences, field transitions should be prevented by making job definitions suitable for each field of education. Arbitrary and political employment practices should be abolished with the certificates given by organizing short-term courses. Pennington, (2021) schools and sports scientists can be influential in guiding students' future life views. Yazıcı & Koçak, (2018) state that the employment and career of sports graduates are affected by the country's education and political system, the personal characteristics of the individual, and the industry itself. University students, who are worried about their future and have lost hope, will not be able to make a healthy choice with negative emotions and behaviors, and they will be able to turn to a profession outside of their own field of education that they are not happy with. Negative emotions and behaviors such as unemployment and hopelessness can be prevented by introducing sports career, employment and working areas to young people with an effective guidance system. University students, who are worried about their future and have lost hope, will not be able to make healthy choices with negative emotions and behaviors, and they will turn to professions different from their own field of education that they are not happy with. Negative emotions and behaviors such as unemployment and hopelessness can be prevented by introducing sports career, employment and business fields to young people with an effective guidance system.

Based on the findings of this study, it can be said that while men experience unemployment anxiety more, women are more hopeless than men because they are more affected by the current situation and that social structure, social norms and status as well as gender-related emotions and behaviors are the cause of this differentiation.

Limitations and Recommendations

This study was limited to students studying at different faculties in 2022. Future studies should be done more comprehensively by increasing the number of participants. In addition, the age groups and academic achievements of the participants should also be considered.

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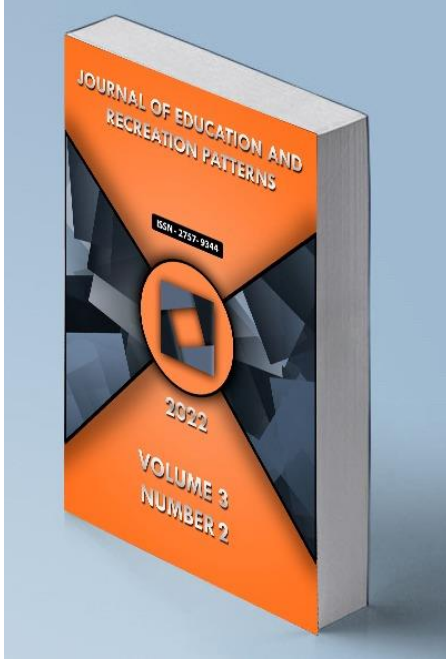
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Investigation of Subjective Well-Being Levels of Disabled Individuals Doing and Not Doing Sport

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Investigation of Subjective Well-Being Levels of Disabled Individuals Doing and Not Doing Sport

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ABSTRACT

This study offers a comparative analysis of the subjective well-being of disabled individuals according to whether they do sport or not. The study was designed as a quantitative research. It is seen in the positive psychology literature that research on quality of life accelerate research on subjective well-being. Subjective well-being affects almost all aspects of life, and therefore, the fact that children, adolescents, adults and disabled people lead a healthy life is directly related to their level of well-being. The aim of this study is to investigate the subjective well-being levels of visually disabled individuals doing sport and not doing sport and to evaluate the differences between the subjective well-being of disabled individuals who do sport and those who do not. A total of 100 visually disabled individuals voluntarily participated in the study, including disabled individuals doing sport and not doing sport.

The Turkish version of the PERMA measurement tool was used to evaluate the well-being of the participants. As a result of the research, disabled individuals who do sport had statistically significantly higher subjective well-being parameters compared to disabled individuals who do not do sport. The results showed that sport or physical activities have positive effects on the life quality of disabled individuals, in social life, in supporting psychological and social development and in maintaining a stable emotional life. Sustainable exercise or sportive social life is recommended for a healthier, dynamic and social life.

Keywords: Disabled Individuals, Exercise, Physical Activity, Sport, Subjective Well-Being



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INTRODUCTION

Sport is an educational and entertaining activity that is performed individually or as a team, has rules, is generally based on a competition system and provides physical and mental development. Sport is a cultural concept that develops the abilities obtained by transforming the natural environment of the individual into a human environment (surrounded by people), performed as a leisure activity or as a full-time occupation, and as a result, contributes to socialization, and integration and solidarity of the society (Kılıçgil, 1998). Undoubtedly, sport, in its most comprehensive sense, is a set of events that have an important place in human life and in the health of society (Özbaydar, 1983).

A recent survey on 534 elderly adults from various communities in the United States showed that participation in the match and integration with the team had positive and significant effects on perceptions of emotional support compared to other elderly adult team supporters (Inoue et al., 2020).

Another study using experimental and control group examined the subjective well-being of individuals through enjoying communication and found that participants in the experimental group (n = 90) had higher levels of positive affect and lower levels of negative affect compared to the participants in the control group (n = 87) (Jiao et al., 2021).

Sport is among the most important elements that support the psychological and social development of the individual in social life (Baser, 1998).

Engaging in physical activities or doing sport is associated with higher levels of subjective well-being. In a study, active people, beginners and inactive people were divided into three groups according to their physical activity status. Participants took part in a survey on happiness, life satisfaction, self-esteem, and physical activity, and a strong relationship was found between subjective well-being and physical activity. It was reported that active people had higher happiness and self-esteem scores compared to beginners and inactive people, and that they had higher life satisfaction scores than inactive people. In addition, beginners were enrolled in a 4-week exercise program, and the results showed that the beginners had higher life satisfaction and happiness scores compared to the inactive ones. It is seen that even a short time such as 4 weeks can contribute to an increase in subjective well-being (Iwon et al., 2021).

The benefits of physical activity or sport are universal for all individuals, including disabled people. Considering that disabled individuals tend to spend less time outside their comfort zone, in parallel, subjective well-being levels raise doubts (Ralph et al., 2022). The functionality of social services shows that disabled people do not have exactly the same opportunities to achieve subjective well-being as non-disabled people (Hadjar & Kotitschle, 2021). In general, it is known that disabled people have worse health conditions than non-disabled people (WHO, 2011). Engaging in physical activities suitable for the individuals increases muscle strength and reduces the risk of chronic diseases (Durstine et al., 2013; Çağrı et al., 2015; Akil et al., 2016; Top & Akil, 2018) and enables to improve the quality of life (De Hollander & Proper 2018; Kosowan et al., 2019). However, almost half of disabled individuals are physically inactive and probably have a chronic disease (Carroll et al., 2014). Participation of disabled people in sport and recreational activities encourages the masses, minimizes deconditioning, optimizes physical functioning and increases general well-being (Murphy et al., 2008).

Regular physical activities have become essential for health (Janssen, 2007). It is widely accepted that the health benefits of sport are not limited to physical health, but also include mental components (DHHS), so it can be associated with subjective well-being. In addition,

individuals with a high level of subjective well-being seem to have a good quality of life in controlling their emotions and coping with problems. On the other hand, people with low subjective well-being tend to lead an unhappy life with negative emotions and thoughts that can cause anxiety, anger and depression (Lyubomirsky, 2013). Most studies on subjective well-being have generally been conducted in schools and have, therefore, focused on children and adolescents. Half of the studies have been conducted to compare health status between the members of sport clubs, individuals who do sport and participate in other combined sport activities, or those who do not do any sport (Linver et al., 2009; Valois et al., 2008; Michael et al., 2006; Hansen et al., 2003; Ferron et al., 1999).

It has been reported that there are no great differences between the findings obtained in the studies, and that there are similar relationships between participation in sport and psychological and social well-being. Holt et al. (2011) conducted a more comprehensive research and a qualitative study by interviewing parents and children, and as a result, they noted that participation in sport or physical activities provides social benefits as well as personal benefits.

In the literature, there are many studies that make comparisons between those doing sport and not doing sports and individual or team sports, and most of them are carried out on students, while there is no research based on whether the subjective well-being of disabled individuals can be achieved through sports, or whether disabled individuals can be brought to a more prosperous level of health in this way.

The literature includes many studies on subjective well-being, but there are few studies from a comparative perspective, especially about how it differs from sport. Subjective well-being can be explained as a state of enjoying life, contentment or well-being (Kolsallayan, 2017). Feeling positive and being away from negative thoughts also explains well-being (Dilmaç & Özkan, 2019). The concepts close to well-being such as happiness, quality of life and life satisfaction can sometimes be used interchangeably (Telef, 2013). In this respect, when the concept of well-being is examined in terms of meaning, it is seen that it has a multidimensional and complex structure (Bergman & Scott, 2001). The concept of well-being is categorized as subjective well-being (hedonistic) and psychological well-being (Ryan & Deci, 2001).

Some social scientists have begun to question what kind of interaction there can be between the progress of societies and their happiness levels, and they have argued that we need not only objective measures but also subjective measures to know the life quality of a society (Bericat, 2019). In our study, we evaluated the relationship of sport with happiness and well-being by examining the data on the subjective well-being of disabled individuals who do sport and those who do not.

Subjective well-being has been shown to be associated with a number of positive outcomes, including academic achievement (Bücker et al. 2018; Datu & King 2018), physical health (Shaffer-Hudkins et al., 2010), and greater ability to cope with challenges (Coyle & Vera, 2013).

In their study, Rasciute and Downward (2010) examined the relationship of cycling, walking and participation in any of the 67 sports with happiness, and received positive feedback about the recreational dimension and benefits of walking activity in the subjective evaluation results. Similarly, cycling was also evaluated as a useful recreational activity and sportive participation, and positive effects of sport were observed on health, happiness and subjective well-being of individuals.

Rasciute and Downward (2010), who stated that participation in sport is a variable that measures happiness, used the Participation Survey to analyze its different effects on subjective well-being. As a result, they suggested that partner sport, such as team sport and racquet sport, are more effective in increasing subjective well-being.

Lee and Park (2010) included six different types of physical disabilities in their study conducted for the Korean Sport Association to examine the effects of physical activities on the subjective well-being of disabled people and found that participation in sport resulted in higher subjective well-being.

It is seen that subjective well-being makes people satisfied with their private life, professional life or other areas, at the cognitive level (Diener, 1994; Samsari et al., 2019). In addition, the sum of positive emotions such as feeling hopeful, cheerful, full of life and proud and negative emotions such as feeling angry, jealous, and guilty also explains subjective well-being (Myers et al., 1995). It is known that sport activities have many positive effects on quality life in terms of health and subjective well-being (Taylor et al., 2015). During the sport activity, the stress level of the individual decreases as the serotonin hormone is secreted in the human body. As a result, symptoms of anxiety and depression decrease and individuals feel happy and peaceful. The fact that sport reduces the feeling of tension and makes the person feel good psychologically has caused it to be included as a treatment method in rehabilitation programs (Bayar, 2004).

While it is seen that the studies primarily focus on the effects of personal factors (such as age, gender, health and education) and external factors (such as political, economic) on the well-being of individuals, it is noteworthy that there are a few studies on the relationship between sport and the subjective well-being of disabled individuals. Although there is evidence that participation in sport increases subjective well-being, more supportive research is needed (Rasciute & Downward, 2010).

As a result, the subjective well-being parameters of the disabled people who do sport were evaluated in terms of age, gender, marital status, income and occupation, and it was determined that they were higher than those of the disabled people who do not do sport.

This study aims to provide valuable contributions to the existing literature by investigating the effects of participation in sport on subjective well-being, emphasizing sport activities that will increase the life quality of disabled individuals and contribute to their subjective well-being.

METHOD

The population and the Sample Group of the Study

Quantitative research methods and techniques were used in the study conducted to examine the subjective well-being levels of visually impaired individuals who do and do not do sports. While the population of the research consists of disabled individuals, the sample group consists of visually impaired individuals between the ages of 18-47 who do or do not do sports.

Data Collection Tools

The "Personal Information Form" prepared by the researcher and the Turkish version of the "PERMA" scale (Demirci et al., 2017) developed by Butler and Kern (2016) were used to collect the data. The scale, which was developed by Butler and Kern (2016) and aims to

measure conceptualization, consists of six sub-dimensions of psychological well-being: positive emotions, attachment, positive relationships, meaning, success and health.

Data Collection and Statistical Analysis

Microsoft Excel and SPSS 25.00 computer program were used in the analysis of the data, t-test and one-way analysis of variance test were applied to test the hypotheses.

FINDINGS

In this section, statistical evaluation of the data was made and the results of the evaluation were shown in tables.

Table 1. Subjective Well-Being Sub-Dimension Evaluations by Gender Factor

Dimensions	Gender	n	x	Sd	t	p
Positive emotions	Female	35	7,6095	1,39440	0.241	0.810
	Male	65	7,5282	1,70975		
Attachment	Female	35	7,2476	1,69648	-0.171	0.865
	Male	60	7,3111	1,77752		
Positive Relationships	Female	34	7,2549	1,65564	0.212	0.832
	Male	61	7,1803	1,63364		
Meaning	Female	34	7,5294	1,72156	-0.085	0.832
	Male	61	7,5628	1,89399		
Success	Female	34	7,6569	1,64016	0.005	0.996
	Male	58	7,6552	1,45761		
Health	Female	34	7,9020	1,91315	-0.828	0.410
	Male	61	8,2240	1,76354		

Table 1 shows the effects of gender on subjective well-being values in disabled individuals doing sport and not doing sport. There is no difference in terms of gender in sub-dimensions of Positive emotions (t=0.24;p>0.05), attachment (t=-0.171;p>0.05), positive relationships (t=0.212;p>0.05), meaning (t=-0.085;p>0.05), success (t=0.005;p>0.05) and health (t=-0.828;p>0.05).

Table 2. Subjective Well-Being Sub-Dimension Evaluations By Marital Status Factor

	Marital Status	n	x	Sd	t	p
Positive emotions	Single	61	7,7158	1,56801	1.248	0.215
	Married	39	7,3077	1,63726		
Attachment	Single	59	7,5424	1,70631	1.850	0.067
	Married	36	6,8704	1,73531		
Positive Relationships	Single	60	7,1444	1,71881	-0.487	0.627
	Married	35	7,3143	1,49278		
Meaning	Single	59	7,6497	1,92824	0.674	0.502
	Married	36	7,3889	1,65520		
Success	Single	58	7,7414	1,53712	0.704	0.483
	Married	34	7,5098	1,49800		
Health	Single	59	8,5367	1,56961	2.902	0.005**
	Married	36	7,4074	1,98744		

*p<.05

As seen in Table 2, positive emotions ($t=1.248;p>0.05$), attachment ($t=1.850;p>0.05$), positive relationships ($t=-0.487;p>0.05$), meaning ($t=0.674;p>0.05$) and success ($t=0.704;p>0.05$) sub-dimensions do not show any difference in terms of marital status, while single participants have higher values than married ones in health ($t=2.902;p<0.05$) sub-dimension.

Table 3. Subjective Well-Being Sub-Dimension Evaluations by Age Factor

	Age	n	x	Sd	t	p
Positive Emotions	18-23	32	7,9375	1,34254	1.300	0.275
	24-29	26	7,2436	1,60432		
	30-35	16	7,1667	2,11170		
	36-41	17	7,9020	1,26801		
	42-47	9	7,1481	1,84926		
Attachment	18-23	31	7,7742	1,57853	1.790	0.138
	24-29	25	6,6400	2,00905		
	30-35	14	7,5714	1,27721		
	36-41	16	6,9792	1,86773		
	42-47	9	7,5185	1,51025		
Positive Relationships	18-23	32	7,2500	1,49551	0.753	0.559
	24-29	25	7,0000	2,16239		
	30-35	14	6,8095	1,47175		
	36-41	16	7,7500	1,15149		
	42-47	8	7,2917	1,36204		
Meaning	18-23	31	7,8280	1,83358	0.522	0.720
	24-29	26	7,1410	2,13161		
	30-35	13	7,6154	1,73657		
	36-41	17	7,6667	1,41912		
	42-47	8	7,4583	1,81648		
Success	18-23	32	7,5313	1,71408	0.664	0.619
	24-29	24	7,4028	1,51635		
	30-35	11	7,6667	1,42205		
	36-41	16	8,1250	1,46502		
	42-47	9	7,9259	,95420		
Health	18-23	32	8,5313	1,84500	1.347	0.259
	24-29	25	7,7867	1,78699		
	30-35	12	8,5000	2,09617		
	36-41	17	7,9804	1,50218		
	42-47	9	7,2222	1,78730		

In Table 3, no difference was found between disabled individuals doing sport and not doing sport according to the age factor in the sub-dimensions of positive emotions ($f=1.300;p>0.05$), attachment ($f=1.790;p>0.05$), positive relationships ($f=0.753;p>0.05$), meaning ($f=0.522;p>0.05$), success ($f=0.664;p>0.05$) and health ($f=1.347;p>0.05$).

Table 4. Subjective Well-Being Sub-Dimension Evaluations by Income Factor

	Income Status	n	x	Sd	t	p
Positive Emotions	1500-3000	30	7,7111	1,73919	1.027	0.397
	3001-4500	11	6,9091	2,11393		
	4501-6000	14	7,1190	1,28507		

	6501-8000	27	7,6667	1,29099			
	8001 and above	17	7,9216	1,68131			
Attachment	1500-3000	28	7,7024	2,09514	1.072	0.375	
	3001-4500	11	7,7576	1,14592			
	4501-6000	14	6,7857	1,93752			
	6501-8000	26	7,0000	1,28236			
	8001 and above	15	7,2667	1,81353			
	1500-3000	30	7,0222	1,93165			
Positive Relationships	3001-4500	11	8,0000	1,22927	1.443	0.226	
	4501-6000	13	6,9487	1,28989			
	6501-8000	25	6,9333	1,67774			
	8001 and above	15	7,7556	1,28771			
	1500-3000	28	7,5952	2,22658			
	3001-4500	10	7,9667	2,19680			
Meaning	4501-6000	14	6,9762	1,90126	0.943	0.443	
	6501-8000	25	7,3333	1,34371			
	8001 and above	17	8,0980	1,39824			
	1500-3000	29	7,6322	1,81778			
	3001-4500	10	7,7667	1,44914			
	4501-6000	13	7,2821	1,72587			
Success	6501-8000	26	7,5769	1,07727	0.773	0.546	
	8001 and above	13	8,2821	1,40664			
	1500-3000 ^a	29	8,8966	1,46413			
	3001-4500 ^b	11	8,2121	1,80907			
	4501-6000 ^c	14	7,3810	1,99939			
	6501-8000 ^d	25	7,5600	1,91418			
Health	8001 and above ^e	15	8,2222	1,70278	2.705	0.035*	a>d

*p<.05

When Table 4 is examined, it is seen that there is no difference between the values according to income factor in the sub-dimensions of positive emotions (f=1.027;p>0.05), attachment (f=1.072;p>0.05), positive relationships (f=1.443;p>0.05), meaning (f=0.943;p>0.05) and success (f=0.773;p>0.05). However, the scores of the participants with an income of 1500-3000 TL are higher than those with an income of 6501-8000 TL in the sub-dimension of health (f=2.705;p<0.05).

Table 5. Subjective Well-Being Sub-Dimension Evaluations by the Factor of Visual Disability Level

	Disability Level	n	x	Sd	t	p
Positive Emotions	B1	57	7,9064 ^a	1,38122	3.598	0.031*
	B2	25	6,9467 ^b	1,64057		
	B3	18	7,2963	1,94664		
Attachment	B1	54	7,6049	1,55551	2.194	0.117
	B2	24	6,7917	2,17987		
	B3	17	6,9804	1,45521		
Positive Relationships	B1	55	7,5333 ^a	1,46228	3.500	0.034*
	B2	23	6,4928 ^b	2,11982		
	B3	17	7,1176	1,07975		
Meaning	B1	54	8,0185 ^a	1,48425	4.895	0.010*
	B2	24	7,1528	2,29256		

	B3	17	6,6275 ^b	1,68277		
Success	B1	53	7,9560 ^a	1,31727		
	B2	23	7,0580 ^b	1,65954	3.008	0.054
	B3	16	7,5208	1,74682		
Health	B1	54	8,5062 ^a	1,64035		
	B2	23	7,7101	1,72710	3.274	0.042*
	B3	18	7,4259 ^b	2,18074		

*p<.05

In Table 5, there is no difference in terms of visual disability levels in the sub-dimensions of attachment ($f=2.194$; $p>0.05$) in visually disabled individuals doing sport and not doing sport. However, in the positive emotions ($f=3.598$; $p<0.05$) sub-dimension, significant results were obtained in favor of the B2 visually disabled participants compared to the B1 visually disabled participants. In the positive relationships ($f=3.500$; $p<0.05$) sub-dimension, significant results were obtained in favor of B2 visually disabled participants compared to B1 visually disabled participants. In the meaning ($f=4.895$; $p<0.05$) sub-dimension, significant results were obtained in favor of the B3 visually disabled participants compared to the B1 visually disabled participants. In the success ($f=3.008$; $p>0.05$) sub-dimension, statistically significant results were obtained against B2 visually disabled participants compared to B1 visually disabled participants. In the health ($f=3.274$; $p<0.05$) sub-dimension, statistically significant results were obtained against the B2 visually disabled participants compared to the B1 visually disabled participants.

Table 6. Subjective Well-Being Sub-Dimension Evaluations by the Occupation Factor

	Occupation	n	x	Sd	t	p
Positive Emotions	Student	32	7,7708	1,50611		
	Civil Servant	44	7,7273	1,41654	2.273	0.108
	Other	24	6,9583	1,92696		
Attachment	Student	31	7,4624	2,05061		
	Civil Servant	42	6,9762	1,52378	1.280	0.283
	Other	22	7,6364	1,62295		
Positive Relationships	Student	31	7,2151	1,91785		
	Civil Servant	40	7,2667	1,63160	0.080	0.923
	Other	24	7,0972	1,25294		
Meaning	Student	31	7,5484	2,22203		
	Civil Servant	43	7,6434	1,52127	0.161	0.851
	Other	21	7,3651	1,82545		
Success	Student	32	7,3854	1,66583		
	Civil Servant	39	7,8120	1,23968	0.777	0.463
	Other	21	7,7778	1,75858		
Health	Student ^A	32	8,7708	1,58496		
	Civil Servant ^b	41	7,6992	1,79630	3.481	0.035*
	Other	22	7,9091	1,96310		

*p<.05

When Table 6 was examined, while no significant difference was found in the sub-dimensions of positive emotions ($f=2.273$; $p>0.05$), attachment ($f=1.280$; $p>0.05$), positive relationships ($f=0.080$; $p>0.05$), meaning ($f=0.161$; $p>0.05$) and success ($f=0.777$; $p>0.05$), statistically significant results were obtained for the sub-dimension of health ($f=3.481$; $p<0.05$) against the participants who were civil servants compared to those who were students.

Table 7. Subjective Well-Being Sub-Dimension Evaluations by the Factor of Doing Sports or Not

	Doing Sport	n	x	Sd	t	p
Positive Emotions	Yes	79	7,7426	1,53492	2.303	0.023*
	No	21	6,8571	1,68184		
Attachment	Yes	74	7,4369	1,61134	1.582	0.117
	No	21	6,7619	2,09004		
Positive Relationships	Yes	75	7,2356	1,59746	0.328	0.743
	No	20	7,1000	1,80026		
Meaning	Yes	76	7,7588	1,72098	2.269	0.026*
	No	19	6,7193	2,03447		
Success	Yes	72	7,8102	1,44359	1.876	0.064
	No	20	7,1000	1,68620		
Health	Yes	75	8,4889	1,43250	3.258	0.003**
	No	20	6,6833	2,36563		

*p<.05

In Table 7, it is seen that there is no difference in the sub-dimensions of attachment (t=1.582;p>0.05), positive relationships (t=0.328;p>0.05) and success (t=1.876;p>0.05) in visually disabled individuals doing sport and not doing sport according to the status of doing sport. The scores of the participants who do sport are higher than those of the participants who do not do sport in the sub-dimensions of positive emotions (t=2.303;p<0.05), meaning (t=2.269;p<0.05) and health (t=3.258;p<0.05).

Table 8. Subjective Well-Being Sub-Dimension Evaluations by the Factor of Frequency of Doing Sport

	Frequency of Doing Sport	n	x	Sd	t	p	
Positive Emotions	Does not do Any Sport ^a	17	6,6863	1,81992	2.711	0.035*	d>a
	1 or 2 Times a Week ^b	28	7,8095	1,46124			
	3 or 4 Times a Week ^c	31	7,8817	1,35414			
	4 or 5 Times a Week ^d	12	8,0278	1,46652			
	1 or 2 Times a Month ^e	12	6,8889	1,86045			
Attachment	Does not do Any Sport	17	6,4706	2,12805	1.735	0.149	
	1 or 2 Times a Week	26	7,0769	2,09403			
	3 or 4 Times a Week	30	7,5667	1,21343			
	4 or 5 Times a Week	12	7,8056	1,40316			
	1 or 2 Times a Month	10	7,7667	1,39709			
Positive Relationships	Does not do Any Sport	16	6,9375	1,86674	1.128	0.349	
	1 or 2 Times a Week	27	7,2222	1,95680			
	3 or 4 Times a Week	30	7,6556	1,16948			
	4 or 5 Times a Week	11	6,9394	1,05217			
	1 or 2 Times a Month	11	6,6061	1,90215			
Meaning	Does not do Any Sport ^a	15	6,5111	2,15608	2.509	0.047*	c>a
	1 or 2 Times a Week ^b	28	7,5833	1,90219			
	3 or 4 Times a Week ^c	29	8,1724	1,39904			
	4 or 5 Times a Week ^d	12	7,7778	1,59756			
	1 or 2 Times a Month ^e	11	7,0000	1,89737			
Success	Does not do Any Sport	16	6,8958	1,70715	1.999	0.102	

	1 or 2 Times a Week	27	7,7160	1,60049			
	3 or 4 Times a Week	26	7,7821	1,24344			
	4 or 5 Times a Week	12	8,4444	1,21716			
	1 or 2 Times a Month	11	7,4545	1,64163			
	Does not do Any Sport ^a	16	6,4792	2,40668			
	1 or 2 Times a Week ^b	27	8,7284	,96979			
Health	3 or 4 Times a Week ^c	29	8,7011	1,39257	6.934	0.00**	b-c-d>a
	4 or 5 Times a Week ^d	12	8,3056	1,77217			
	1 or 2 Times a Month ^e	11	7,1818	1,91116			

*p<.05

According to Table 8, while no change was observed in the sub-dimensions of attachment ($f=1.735;p>0.05$), positive relationships ($f=1.128;p>0.05$) and success ($f=1.999;p>0.05$) in visually disabled individuals doing sport and not doing sport according to the factor of frequency of doing sport, statistically significant results were obtained in the sub-dimensions of positive emotions ($f=2.711;p<0.05$) and meaning ($f=2.509;p<0.05$) in favor of the participants who do not do any sport compared to the participants who do sport 3 or 4 times a week, and statistically significant results were obtained in the health ($f=6,934$). $p<0.05$ sub-dimension against the participants who do not do any sport compared to the participants who do sport once or twice a week, 3 or 4 times a week, 4 or 5 times a week. Sport is an important factor affecting health.

DISCUSSION AND CONCLUSION

When the results in Table 1 are examined, it is observed that there is no statistically significant difference in the sub-dimensions of positive emotions, attachment, positive relationships, meaning, success and health in visually disabled individuals doing sport and not doing sport according to the gender variable. There are studies in parallel with the result we reached, revealing that there is no difference between the levels of well-being according to the gender variable (Çelik et al., 2020; Fuller et al., 2010; Kermen et al., 2016; Özen & Gülaçtı, 2012). Dikmen (2019) examined the relationship between psychological well-being and social problem-solving skills of university students and found that there was no difference between gender variable and psychological well-being. Since individuals with different characteristics have different lifestyles and expectations from life, it is possible that there are individual and psychological differences between gender and well-being (Özen & Gülaçtı, 2012).

In Table 2, while no significant difference was found in the sub-dimension of positive emotions, attachment, positive relationships, meaning and success in the analysis of the visually disabled people doing sport and not doing sport according to the marital status variable, significant results were obtained in favor of single participants in the sub-dimension of health. Accordingly, it was thought that the single participants' ability to devote more time to themselves than the married ones could lead to significant results in the health dimension. There are studies in which the rate of participation in leisure activities of single people is higher than that of married people (Türker et al., 2016). These studies support our conclusion.

In Table 3, no statistically significant results were obtained in the sub-dimensions of positive emotions, attachment, positive relationships, meaning and success in the analysis of visually disabled people doing sport and not doing sport according to the age variable. There are studies that support the results we found. In his study conducted in 2018, Acun analyzed subjective well-being in terms of age groups and did not reach a significant difference.

In Table 4, when the results according to the income variable are examined, no significant difference was found in terms of positive emotions, attachment, positive relationships, meaning and success, while statistically significant results were achieved in favor

of the participants with an income of 1500-3000 TL compared to the participants with an income of 6501-8000 TL in the health sub-dimension. The studies with similar results can be reached when the literature is reviewed. Özkan (2019) examined the psychological well-being levels of individuals who play football according to different variables, and determined that there was a statistically significant difference between the monthly income variable and psychological well-being in favor of the participants whose income was 0-500 TL compared to the participants whose income was 1001 TL or more. According to the research findings, the fact that people's financial levels do not have an effect on life satisfaction refutes the opinion that money brings happiness, which is known as the general judgment by the society. It can be said that the reason for this is that people build their life satisfaction on psychological foundations and that the importance given to material goods is not much contrary to what is believed.

In Table 5, when the results according to the visual disability variable were examined, there was no statistically significant difference in attachment sub-dimensions, while significant results were obtained in the positive emotions sub-dimension in favor of the B2 visually disabled participants compared to the B1 visually disabled participants. According to this result, it was concluded that individuals with high vision have more positive emotions, establish more positive relationships and lead a more meaningful life than individuals with low vision. The reason for this is that as the disability rate increases, the state of restriction and dependence on others increases and this reduces positive emotions and positive relationships in these individuals. Karlsson's (1998) study with the visually disabled individuals showed that individuals with low vision have higher levels of loneliness, abandonment and anxiety than individuals with higher vision. In the light of the results we have reached and the studies in parallel with this, it is thought that as the vision loss increases, it becomes more difficult to perform daily activities and, since social withdrawal behavior may increase in parallel, establishing positive relationships and feeling positive and meaningful emotions are negatively affected.

In the success and health sub-dimensions of our analysis result, statistically significant results were obtained against the B2 visually disabled participants compared to the B1 visually disabled participants. The fact that individuals with a higher level of vision have motives such as self-acceptance and proving themselves is important in terms of participation in life and existence in social life. In many studies in the literature, it is stated that the quality of life deteriorates as the visual level decreases (Chadha & Subramanian, 2011). In order to rehabilitate this, it is important to ensure that disabled people participate in daily activities as much as possible as the level of vision decreases. Therefore, it can be assumed that the need for social and sport activities increases as the disability rate increases, and as a natural result, an increase in health and success is observed.

In Table 6, when the analysis results of visually disabled individuals doing sport and not doing sport according to the occupational variable were examined, no significant difference was found in the sub-dimensions of positive emotions, attachment, positive relationships, meaning and success, while statistically significant results were obtained in the sub-dimensions of health against the participants who are civil servants compared to the participants who are students. It can be said that students make a significant difference compared to civil servants in terms of sportive activities and active lifestyle. Because, if we consider that being a civil servant is less active, routine, binding and responsibility-loading than being a student, and that students may feel freer and younger than civil servants, we can conclude that students may be healthier than civil servants. In his study supporting our result, Ceviz (2008) concluded that public employees generally face body composition changes, obesity problems and blood pressure problems due to irregular eating habits and sedentary lifestyle, and that these changes in body composition pose a risk for many diseases.

In Table 7, when the analysis results according to the variable of doing or not doing sport were examined, no significant difference was found in the sub-dimensions of attachment, positive relationships and success, while statistically significant results were obtained against the participants who do not do sport compared to the participants who do sport in the sub-dimensions of positive emotions, meaning and health. We can say that the most basic component of protecting and improving our physical and psychological health is an active lifestyle. We can think that those who do not do sport make a negative difference compared to those who do sport in the variable of positive emotions, meaning and health due to the effect of sport activities on improving people's health and reducing the stress of daily life. It is thought that people's adaptation to the society they live in depends on their spiritual, mental and physical health. İnal (2003) concluded in his study that physical education and sport contribute to personality development and are effective in establishing strong bonds. In his study, Atilgan (2020) concluded that the happiness levels of the athletes who did traditional archery in terms of the branch variable were significantly higher. Studies like this one in the literature are in line with the findings of analysis we have reached.

In Table 8, when the results of the variables discussed according to the frequency of doing sport were examined, no significant difference was found in the sub-dimensions of attachment, positive relationships, success while significant differences were obtained in the sub-dimensions of positive emotions and meaning in favor of the participants who do not do any sport compared to the participants who do sport 3 or 4 times a week. Individuals engaged in sport actively can set difficult goals that they can achieve in order to achieve success, and they can make serious psychological and physiological efforts to achieve these goals. Therefore, it is thought that since the individual may feel worn out and dissatisfied, negative affect may occur in the individual and it may have negative effects on positive emotions and attachment variables. In the health sub-dimensions of the frequency of doing sport of our analysis, statistically significant results were obtained against the participants not doing any sport compared to the participants doing sport 1 or 2 times a week, 3 or 4 times a week, 4 or 5 times a week. The health benefits of sport have been proven in many studies. One of the studies that best supports our findings is Baumann's (1994) study, which states that regular physical activity makes the muscles, joints and bones, cardiovascular system and its functions work much better.

Individuals who do sport make physically and emotionally healthier and more positive impression than those who do not. Even though doing sport intensely and actively affects positive affect negatively compared to not doing it, it has been observed that conscious and regular physical activities have a positive effect on health. On the other hand, it has been concluded that the people with low vision (B2, B3) experience the positive feeling effect of sport more compared to the people who have no vision (B1) since sport activities have the effect of improving health and psychology on the visually disabled.

As a result, when compared to individuals with low vision, individuals with no vision cannot sufficiently benefit from the contribution of sport to subjective well-being. This especially gives rise to the assumption that there are some obstacles in the participation of individuals with no vision in sport. Therefore, it is necessary to conduct new research and to study on solutions regarding the barriers of visually impaired individuals to participation in sport. Limitations in the social experiences of disabled individuals, which affect or prevent them from engaging in physical activities and doing sport, negatively affect their socialization and well-being levels and distinguish them from other non-disabled groups.

Special programs and studies should be carried out for disabled individuals, and they should be provided with coaches trained on this field. The participation of the disabled in sport and social life should be arranged by training the coaches who will prepare special programs. In addition, specialization should be ensured on the Sport for the Disabled courses included in the education programs of universities. Seminars and trainings will increase the awareness of

students in this field. Field-specific postgraduate programs should be opened in universities. Furthermore, sport facilities should be designed in such a way that the disabled can easily access and do sport, and there should be trainers who are experts in this field. Through sport, it can be ensured that disabled people are more active and accepted in the society.

Participation in sport should be regarded as a necessity for individuals from all walks of life, as it not only improves physical health such as weight crisis, but also eliminates psychological and social health problems, and more research should be conducted on the psychosocial well-being that can be achieved through participation in sport.

Limitations and Recommendations

The fact that the sample group was chosen especially from visually impaired individuals created problems in reaching, applying and returning the questionnaire to individuals. Particularly at the point of applying the scale, the inability of individuals to practice alone constitutes the limitations of the research.

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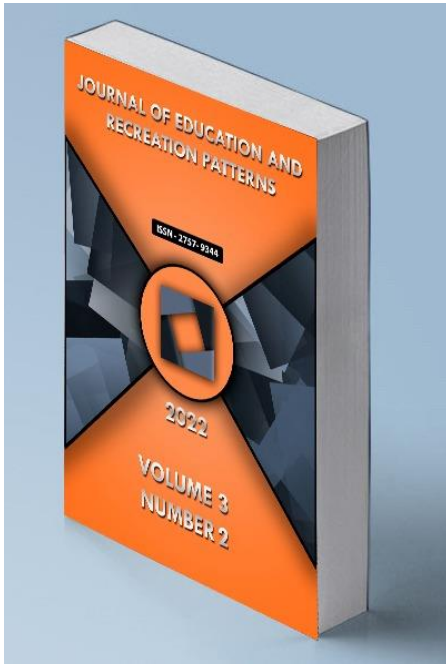
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Weapon Control Analysis and Evaluation of Fencing Athletes Participating in Islamic Solidarity Games


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Weapon Control Analysis and Evaluation of Fencing Athletes Participating in Islamic Solidarity Games

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ABSTRACT

The aim of this research was the control analysis of fencing equipment that the fencers having participated in the 5th Islamic Solidarity Games organized in our country between 14-17 August 2022 used within the competition and delivered to the official weapon control unit, and assessment and interpretation of this analysis. The research group is composed of 125 athletes who participated in the 5th Islamic Solidarity Games from 14 different countries. Within the scope of the research, weapon control result forms of 125 athletes who participated in the 5th Islamic Solidarity Games were assessed with the support and permission of the Turkish Fencing Federation. The data obtained from weapon control result forms were firstly categorized for online processing. During the analysis process, a data analysis program called MAXQDA Analytics Pro 2018 (Release 18.2.4) (Professional Data Analysis Software for Qualitative and Mixed Methods) was used. The data obtained from weapon control result forms were described with percentage and frequency values. Within the scope of the research, it was found that the percentage values of some of the equipment of 125 fencers who participated in the 5th Islamic Solidarity Games and made up sampling group that could not get the seal of certification after weapon control were high. These are body wires with the rates of 19,5% and 14% and epee weapon with the rate of 12,5%. The International Fencing Federation made a new arrangement in Articles 18, 29 and 31 of instructions of material use and published a regulation relating to the requirement that wire plugs of body wires should be transparent and guard socket of epee should be double-hole. Within the scope of the research, it can be said that the high percentage values of some equipment that couldn't get the seal of certification resulted from lack of information about this regulation.

Keywords: Fencing Weapon Control, Islamic Solidarity Games, Sport



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INTRODUCTION

Sword fight has been existing for more than 2000 years. It was applied in many forms in different cultures. Although it was associated with survival, domination and conquest efforts at the beginning, it has existed as a sports branch since ancient Egypt, it has become popular in Europe with the spreading of the tournaments in which spears and swords were used in the Middle Age (Murgu, 2006).

Modern fencing was accepted to the first modern Olympic games taking place in Athens (1896) and included in the games (Roi & Bianchedi, 2008). Fencing, one of a few branches in each of Modern Olympic Games, is one of the sports branches in which perceptual and psychomotor qualities are used at the highest level (Turner et al., 2013). Modern fencing is composed of preparation for a fight and competition between two rivals armed equally with traditional weapons, with an athletic performance, according to certain rules. The aim of this sportive combat can be defined as to score on one's opponent the maximum number of conventional hits or thrusts, in a given time, while attempting to avoid being hit oneself, or at least to receive as few hits as possible (Czajkowski, 2011).

In fencing, along with physical abilities such as attention, speed and endurance and judgment ability, mental qualities called as immediate decision-making and success determination should work in a combined and harmonious manner (Tümlü, 2009). When it comes to sports, the first thing coming to the mind is a situation in which physical skills come into prominence; however, in fencing, in addition to basic motor skills or training of the athlete, some factors also affect success of the athletes (Kalkan & Zekioğlu, 2017). These factors may include effective factors in different categories such as external environment based stress, decisions of the referee, effects of trainer and etc. In addition to the abovementioned athlete-dependent sportive performance and effects of external environment, it can be said that another effective factor in fencing sport is fencing equipment. Fencing jackets, masks, other protective equipment, electrical fencing weapons, conductive vests and body wires used by the athletes individually can be shown as an example to this equipment. The international fencing federation (FIE) applies a set of measures and rules both for safety of athletes and to prevent advantages and disadvantages. These rules are given clearly in official rules and instructions. These measures are applied not only internationally but also by many countries in national organizations. Semi commission of international fencing federation is the body authorized to make regulations about safety of fencing materials, their suitability for competitions and detailed rules (FIE, 2022). Also in our country, "Safety of Equipment and Material Control Instructions" are applied by the Turkish Fencing Federation (TFF) for the sake of use of fencing materials and sustainability of safe fencing (TFF, 2022).

Before international competitions, all fencers are obliged to have their materials controlled. A special site within the competition area is determined as "Weapon Control" site. In this site, the officials and commission members assigned by FIE or regional competent federations carry out this control process. Many equipments are subject to different control rules. These rules are as follows with simple images (FIE, 2022).

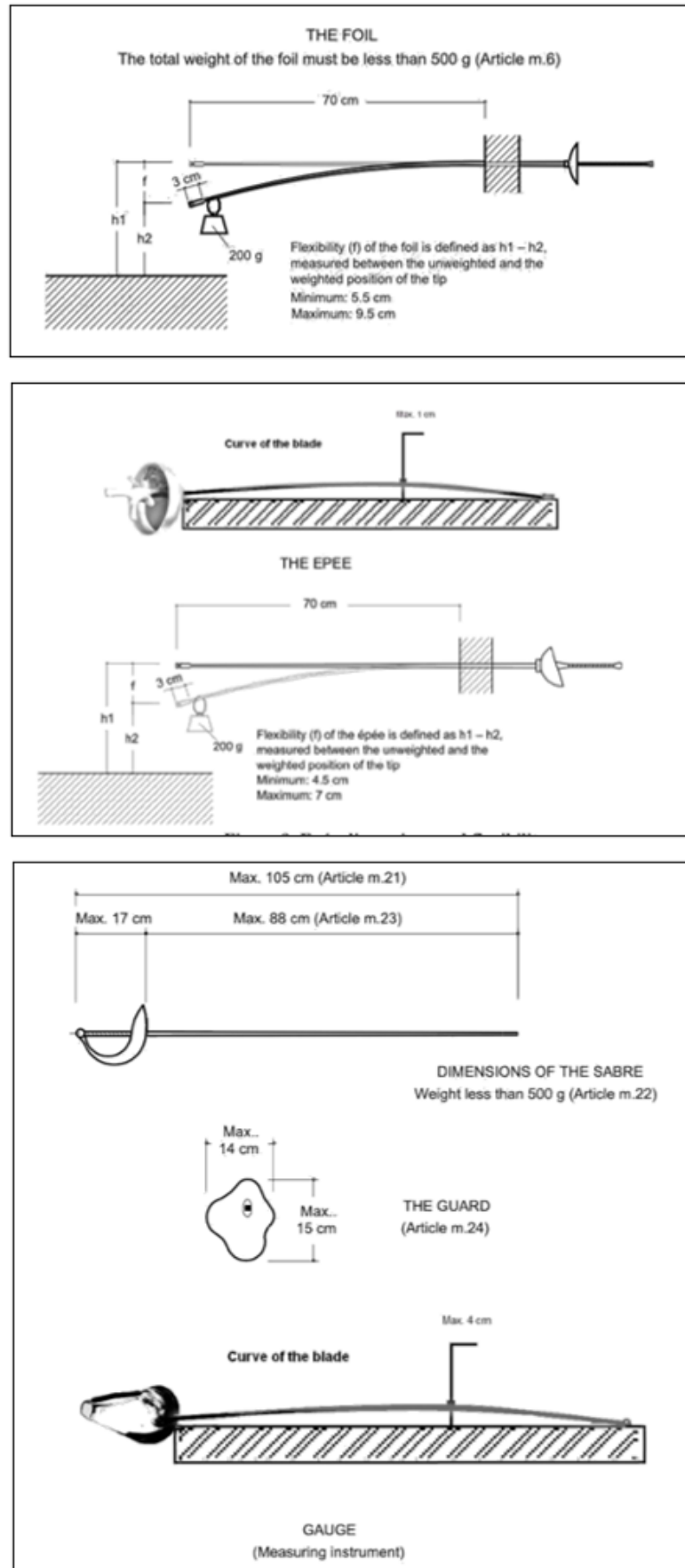


Figure 1. Fencing weapons control rules.

In fencing, three different weapon types have features different from each other (Abdollah et al., 2014). The fencing weapons included in many different control processes such as flexibility, length of weapons, handle dimensions and guard dimensions are one of the most important materials for the athletes.

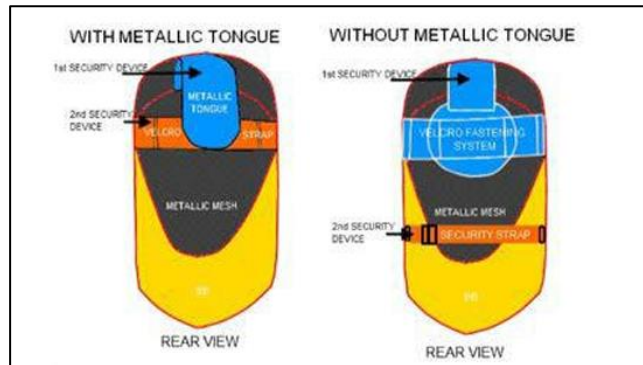


Figure 2. Fencing mask control rules.

In accordance with the decisions taken by the semi commission on fencing masks, it was decided that the protective belt behind the mask has double-sided protective safety and this apparatus is provided by authorized suppliers. Furthermore, the masks to be used in international fencing competitions should be resistant to 1600 Newton pressure. During the control process, it is also controlled whether the masks are resistant to penetration pressure of 12 kg with a special stapler (Harmer, 2008).

The main three fabric parts of fencing equipment are called as fencing jacket, fencing pants and plastron. The material manufacturers are liable to control whether fencing clothes have durability and strength to a certain degree (Beskin & Halavska, 2017). Use of clothes without valid certification mark in international organizations is not possible. According to the new regulation of the international fencing federation, the fencing clothes will be followed with a chip. Thanks to this chip, it will be possible to reach information such as type and manufacturer of the fencing clothes electronically and in a mobile way.

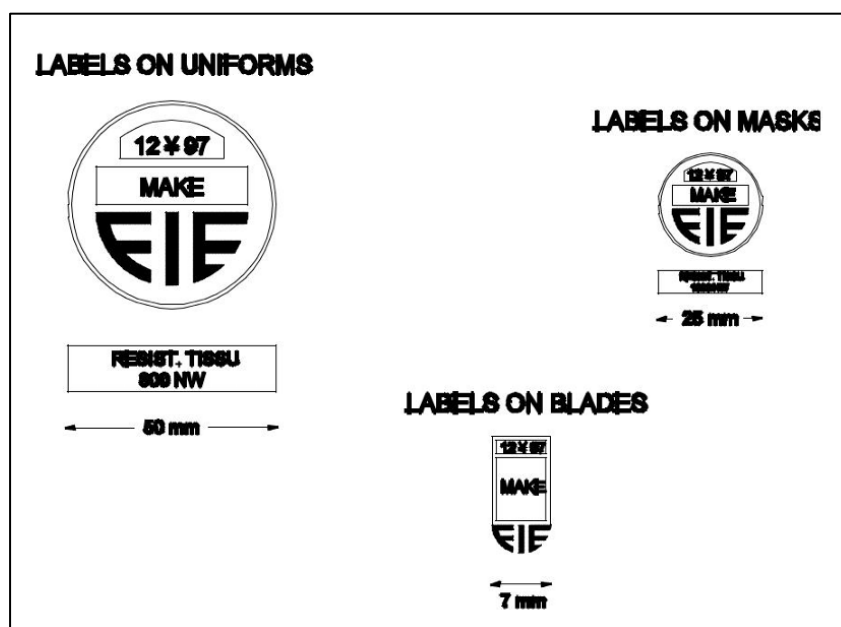


Figure 3. Fie Quality Labels.



Figure 4. Fencing Clothing Chip.

Fencing clothes and other necessary electronic equipment are offered to the use of athletes after a very detailed safety control process. The fencers who want to increase their sportive performance to the highest level have the responsibility that their materials are sound and have desired requirements. It is not possible for the athletes to compete in international competitions with the fencing materials which haven't completed the weapon control process.

Islamic Solidarity Games

Islam teaches showing respect of people to each other, honoring each other, taking care of each other, mutual collaboration, helping each other, making collaboration in goodness, encouraging solidarity and sharing both in good and bad conditions (Sofyan et al., 2021). In this respect, The Organization of Islamic Cooperation (OIC) was founded in 1969 in order to gather Islam countries under a single roof and to protect interests of Islamic world (OIC, 2022). The Islamic Solidarity Games is a large-scale sports organization in which the member countries of the organization participate and which is held in every four years. The first of Islamic Solidarity Games was held in Jeddah in 2005, the third in Indonesia in 2013, the fourth in Azerbaijan in 2017, and the fifth was planned to be held in 2021, but because of the pandemic, it was held in Konya in 2022 (ISSF, 2022).

METHOD

Within the scope of the research, it was aimed to make a control analysis of fencing equipment that the fencers having participated in the 5th Islamic Solidarity Games organized in our country between 14-17 August 2022 used within the competition and delivered to official weapon control table. The research group is composed of 125 athletes who participated in the 5th Islamic Solidarity Games from 14 different countries. In order to reach the data used in research analysis, 5th Islamic Solidarity Games Weapon Control Form of the Turkish Fencing Federation the was used. This form is attached herein, and forms of some participants were excluded from the research as they had different markings on them. The data obtained from weapon control result forms were firstly categorized for online processing. During the analysis process, a data analysis program called MAXQDA Analytics Pro 2018 (Release 18.2.4) (Professional Data Analysis Software for Qualitative and Mixed Methods) was used. The data obtained from weapon control result forms were described with percentage and frequency values. For this study, approval of Selçuk University Non-Invasive Clinical Researches Ethics Committee was obtained (E.379034). Furthermore, for the data to be used in the content of the

study, permission was obtained from the Turkish Fencing Federation (E-41112846-125.99-3432499).

FINDINGS

When Table 1 was examined, it was tried to explain in details distribution of fencers who participated in the 5th Islamic Solidarity Games held in Konya between 14-17 August 2022 according to their countries.

Table 1. Weapons Control Status of Islamic Solidarity Games Country Participants*

	Countries	Participants Frequence	Percent
1	Azerbaijan	8	%6,4
2	Bangladesh	3	%2,4
3	Iran	17	%13,6
4	Jordan	3	%5,6
5	Kazakhstan	1	%0,8
6	Kyrgyzstan	5	%4
7	Lebanon	6	%4,8
8	Mali	3	%2,4
9	Qatar	6	%4,8
10	Saudi Arabia	16	%12,8
11	Republic of Senegal	6	%4,8
12	Turkey	22	%17,6
13	Uzbekistan	23	%18,4
14	Yemen	2	%1,6
	Total	125	%100

* Some participants were excluded from the research because their weapons control data were not sufficient.

Table 2. Total Number of Equipment Given to Weapon Control by Fencers Participating in Islamic Solidarity Games

Epee	137
Foil	111
Sabre	91
Body Wire (Foil- Sabre)	197
Body Wire (Epee)	123
Mask Wire	159
Foil Lamé	50
Sabre Lamé	59
Breeches	125
Plastron	128
Jacket	125
Foil, Epee Glove	112
Sabre Glove	61
Epee Mask	43
Foil Mask	41
Sabre Mask	47

Table 3. Weapon Control Result Equipment Status of Fencers Participating in Islamic Solidarity Games

	Total	Total Percent	Pass	Pass Percent	Fail	Fail Percent
Epee	48	% 100	42	% 87,5	6	% 12,5
Foil	34	% 100	33	% 97,1	1	% 2,9
Sabre	41	% 100	38	% 92,7	3	% 7,3
Body Wire (Foil- Sabre)	82	% 100	66	% 80,5	16	% 19,5
Body Wire (Epee)	50	% 100	43	% 86	7	% 14
Mask Wire	76	% 100	72	% 94,7	4	% 5,3
Foil Lamé	36	% 100	33	% 91,6	3	% 8,4
Sabre Lamé	43	% 100	39	% 90,7	4	% 9,3
Breeches	115	% 100	113	% 98,3	2	% 1,7
Plastron	116	% 100	115	% 99,1	1	% 0,9
Jacket	119	% 100	117	% 98,3	2	% 1,7
Foil, Epee Glove	77	% 100	74	% 96,1	3	% 3,9
Sabre Glove	45	% 100	40	% 88,9	5	% 2,1
Epee Mask	40	% 100	36	% 90	4	% 10
Foil Mask	36	% 100	32	% 88,9	4	% 2,1
Sabre Mask	43	% 100	42	% 97,6	1	% 2,4

Table 3 gave the numbers of equipment which obtained and did not obtain certification for use after the control among the fencing equipment controlled in the weapon control unit. It was seen that the equipment numbers of which are given in Table 1 and Table 2 were different from each other. This difference stems from the fact that the data given in Table 3 is regarded singular in every equipment type. Furthermore, body wires lead the first with the rates of 19,5% and 14% among the materials which did not obtain seal of certification after the control of equipment of fencers. Also, epee weapon is placed on the top with the rate of 12,5% among the fencing weapons which did not obtain seal of certification.

DISCUSSION AND CONCLUSION

When the historical process of fencing is evaluated, it would not be a mistake to say that its foundations were laid in antique periods. We see that fencing which has been included in Olympic games since the first modern Olympics until now has renewed itself both technologically and tactically. However, it can be said that the researches on fencing do not have sufficient variety relatively (Mcdow, 2009). But, it is possible to encounter many researches aiming analysis and development of fencing equipment at different levels; examples of existing studies may include the analysis of fencing clothes with the aid of pressure sensors with a smart layer by Vieira et al., (2021), the research done by Kokochashvili, (2016) about fencing weapon handles and other equipment, the research done by Smolkin, (2019) which includes analysis of fencing score machines and recommendation of a different prototype, the research done by Santos, (2008) in which high technology opportunities in fencing are assessed and even the congresses made in this respect.

There are no sufficient studies in the field concerning weapon control process results analyzed within the scope of the research. Although there are many researches on revision or development of many fencing equipments in the light of technological advancements, a comprehensive research relating to what type of equipment the athletes have problems

generally will contribute to taking measures and being careful for fencers, trainers and other relevant individuals. FIE Semi Commission is liable to announce new decisions and amendments to the athletes and other sports members. While the innovations sometimes enable the athletes to use their own materials with simple revisions, they may sometimes include complete replacement of the relevant part by authorized service or supplier. It can be said that some innovations made by FIE after the pandemic have affected the result of the research analysis. Within the scope of the research, it was found that percentage values of some of the equipment of 125 fencers who participated in the 5th Islamic Solidarity Games and made up sampling group that could not get seal of certification after weapons control were high. These are body wires with the rates of 19,5% and 14% and epee weapon with the rate of 12,5%.

Even though the materials of fencers are tested and controlled in many different aspects in the weapon control unit, it is seen that the equipment which did not obtain seal of certification was detected among the equipment obliged to be used by the athletes after new regulations of FIE. These high rates may have been observed in the materials of the athletes who did not pay attention to these regulations or did not revise their equipment. Beginning from the season of 2020/2021, FIE has brought new arrangements for wire plugs and guard sockets. The images about these arrangements are as follows.



Figure 5. Epee guard sockets, old and new application (Leon Paul, 2022).

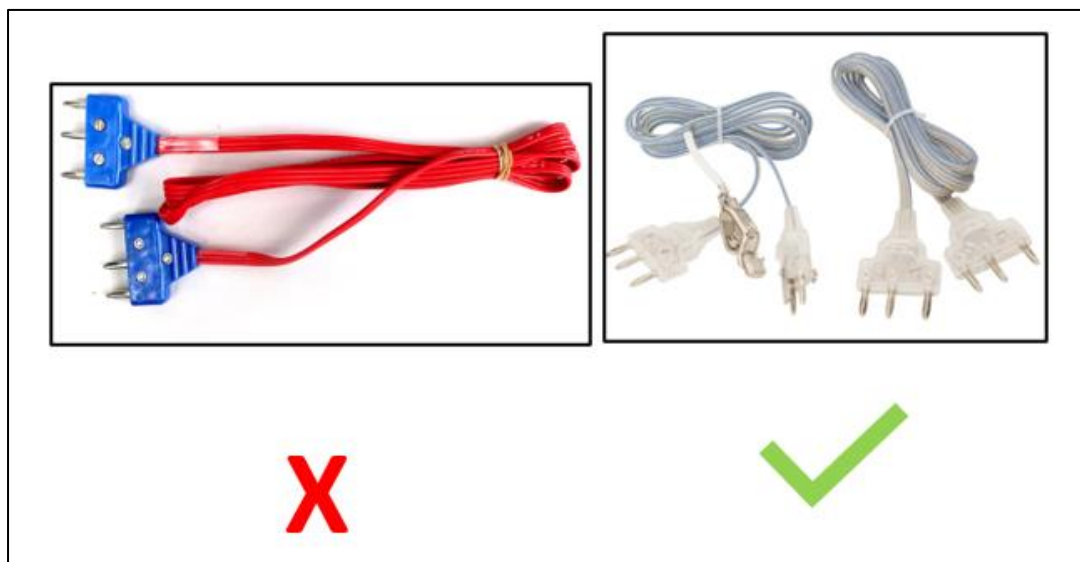


Figure 6. Body Wires (Old and New Application)

International Fencing Federation made a new arrangement in Articles 29 and 31 of material instructions and rules and published a regulation about the requirement that wire plugs of body wires are transparent. Again, in Article 18, a regulation was published stating that epee guard sockets should be double-hole (FIE, 2022). That the epee weapons did not obtain the seal of certification highly within the scope of the research may especially stem from the application of the rule of double holes in guard sockets of epee weapon which has been implemented since August of 2022. The 5th Islamic Solidarity Games took place in August and the relevant rule was applied during the weapon control process.

Even though the basic aim of the fencers was to increase their physical and mental performances to the highest level, they should also have the ability of to manage external factors which affect their success. Especially, they should carry out necessary equipment controls by themselves before delivering it to the Weapon Control Commission. Athletes, trainers and other relevant individuals are liable to know and apply the new decisions of rules of the international Fencing Federation and local federations. The equipment that the athletes use constantly may not receive approval from the approval control unit thus athletes may have adverse effects.

Limitations and Recommendations

The results obtained as a result of this research were obtained with the weapon control forms of the fencing athletes participating in the 5th Islamic Solidarity Games. For this reason, the sample group only consists of the athletes participating in this competition.

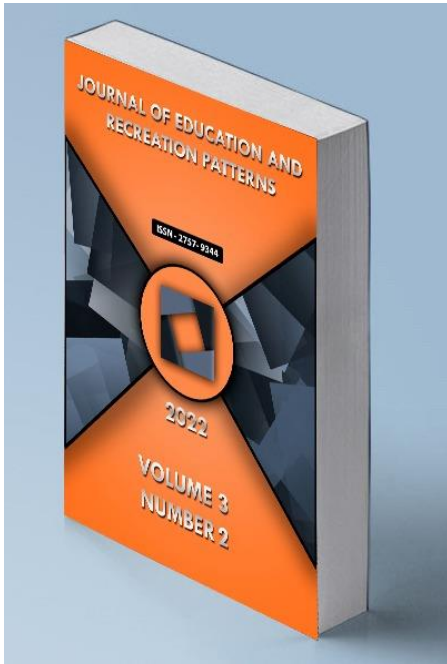
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Investigating Recreation Activity Type on College Students' Subjective Well-being and Leisure Satisfaction

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ABSTRACT (Times New Roman typeface and 10 points)

Those working in higher education have a vested interest in understanding how outdoor recreation activities facilitate happiness in students, especially with student well-being at an all-time low. The following study compares indoor versus outdoor recreation activities within the context of the DRAMMA model of leisure engagement and subjective well-being, which includes the psychological mechanisms of meaning, mastery, detachment-recovery, autonomy, and affiliation. In addition, the role of leisure satisfaction is considered as part of the model. Findings indicated a significant difference in the subjective well-being score between outdoor and indoor recreation participants and a higher score in leisure satisfaction for outdoor than indoor recreation participants.

Keywords: DRAMMA, Happiness, Leisure Satisfaction, Recreation Activity



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INTRODUCTION

The benefits of being happy, operationalized in research as subjective well-being (SWB), are numerous as it fosters sociability, altruism, liking of self and others, strong bodies and immune systems, success, more fulfilling relationships, greater community involvement, higher incomes, and effective conflict resolution skills (DeNeve et al., 2013; Hills & Argyle, 2002; Lyubomirsky et al., 2005; Seligman & Csikszentmihalyi, 2000). SWB refers to how individuals evaluate their own life and consists of high life satisfaction, frequent positive emotions, and few negative feelings (Diener et al., 2018; Newman et al. 2014; Zacher & Rudolph, 2020). Researchers from various disciplines have spent an extensive amount of time trying to understand the foundation of happiness as it is a complex construct with varying definitions (Diener, 1984; Seligman & Csikszentmihalyi, 2000). Lyubomirsky has identified three primary variables that influence happiness: (a) relevant life circumstances, (b) a genetically determined set-point for positive mood and happiness, (c) the extent to which people engage in happiness increasing strategies or behaviors (Lyubomirsky & Layous, 2013; Lyubomirsky et al., 2005).

Recognized as a facilitator of happiness, leisure is a driving factor of SWB (Diener et al., 1999; Holland et al., 2018; Lyubomirsky et al., 2005; Parson et al., 2020). Leisure's influence on happiness is multifaceted as it provides opportunities for affiliation, autonomy, meaning, mastery, and detachment and recovery from stress (DRAMMA) all of which influence leisure and life satisfaction (Kuykendall et al., 2015; Newman et al., 2014). Researchers have emphasized the importance of participant satisfaction in leisure engagements and have identified leisure satisfaction as a key component of both SWB and sustained participation in leisure activities (Diener et al., 1999; Lyubomirsky et al., 2005; Parson et al., 2020; Searle et al., 1993). Recognizing the role leisure engagement plays in the happiness formula is useful, but it is important to understand that not all recreation experiences may equally influence an individual's happiness. For the purposes of this study, we refer to recreation defined by Hurd et al. (2022) as "having fun or enjoying a pastime or diversion" (p. 37). We define leisure play as "any form of play, amusement, etc. used for refreshment of body or mind" (Veal, 1992, p. 2).

Time spent recreating in natural environments is well documented as a strong predictor of happiness and well-being (Arnould & Price, 1993; Capaldi et al., 2014; Hattie et al., 1997; Holland et al., 2018; Holland et al., 2020; Marselle et al., 2014). Those who identify a relationship with nature have been linked to high life satisfaction, self-esteem, and psychological well-being (Houge Mackenzie, 2020). Studies have found a statistically significant positive relationship between nature connectedness and happiness as individuals who are more connected to nature are likely to be happier (Capaldi, 2014), and tend to be flourishing and functioning well psychologically (Pritchard et al., 2020). While research associating beneficial SWB outcomes with recreation experiences has been abundant (Hattie et al., 1997; Holland et al., 2018), there is a gap in the literature exploring the unique influence of indoor versus outdoor recreation experiences on participants' SWB.

College student well-being is at an all-time low, with approximately 30% of students reporting mental health problems (Akeman et al., 2019; Lattie et al., 2019; Oswald et al., 2018) with anxiety and depression identified as the most common disorders (Conley et al., 2015; Lattie et al., 2019). These trends are concerning as students suffering from mental health challenges report negative impacts to their daily functioning, physical health and well-being, academic success and quality of life (Akeman et al., 2019; Conley et al., 2015). As a result, university administrators are exploring strategies to promote and enhance student well-being

(Travia et al., 2022). One approach to enhance student well-being is through increased and diverse leisure opportunities (Diener et al., 1999; Lyubomirsky et al., 2005; Parson et al., 2020).

Studies focusing on college outdoor program experiences have demonstrated positive impacts on students related to adjustment, resilience, social support, and well-being (Andre et al., 2017; Shellman & Hill, 2017). A study of 132 college students who participated in a required two-week outdoor program showed significant gains in resilience and mental health (Shellman & Hill, 2017). Illagan et al. (2020) found that happiness improved for female military cadets after a three-day wilderness backpacking trip. Using pre/post-tests, the study systematically measured female cadets' increases in self-reported happiness on the Oxford Happiness Questionnaire. Qualitative data were also collected post trip to provide additional insight to happiness gains. Increases in happiness for the group were related to: relaxation, adventure, social bonding, nature, and self-reflection. These studies support the usefulness of outdoor recreation programs as a potential medium to cultivate positive mental health and subjective well-being. However, not all leisure engagements are the same and further research is needed to identify the unique influence of varying recreation types on participants' SWB.

This study is grounded on the theoretical DRAMMA model developed by Newman et al. (2014) which assesses the connection between leisure and SWB, through leisure satisfaction, via five psychological pathways (detachment-recovery, affiliation, meaning, mastery, and autonomy). Newman et al. (2014) theorized that the satisfaction of the psychological needs related to the DRAMMA model during leisure time is conducive to improved subjective well-being. Detachment-recovery refers to the degree to which an individual is able to mentally disengage from work during leisure time. Autonomy is defined as the degree to which an individual freely chooses to participate in a leisure activity. Mastery refers to the degree to which a leisure activity challenges and provides learning opportunities. Meaning indicates the process where individuals gain something important or valuable in life through leisure. The last psychological mechanism of the DRAMMA model is affiliation which is the ability of an individual to socially connect with others through leisure experiences.

To date, there has been no study using the DRAMMA model of leisure and SWB to compare indoor and outdoor recreation participation. Therefore, this study aims to understand the relationship between college students' participation in indoor recreation activities and outdoor recreation activities as it contributes to individual SWB. To do this, the following research questions were investigated:

Q1: Is there a difference in SWB between indoor and outdoor recreation?

Q2: Is there a difference in Leisure Satisfaction between indoor and outdoor recreation?

Q3: Do the 5 psychological mechanisms of the DRAMMA model predict SWB in indoor and outdoor recreation participants?

Q4: Do the 5 psychological mechanisms of the DRAMMA model predict leisure satisfaction in indoor and outdoor recreation participants?

Q5: How well does the DRAMMA model explain SWB in a college student population who engage in indoor recreation and outdoor recreation activities?

METHOD

Sampling

Using a convenience sampling procedure, during the 2015-16 academic year, we sent 16,816 undergraduate students at a large, public mid-western university a link to an anonymous electronic-version survey constructed via Qualtrics survey software, requesting their participation. Undergraduate college students are a logical population to study the relationship between leisure participation and happiness as they tend to rank leisure engagements as important in their lives (Blais et al., 1990; Wu, 2009) and is second only to sleep in how students spend their time (Mortenson, 2011). Follow-up emails were sent two and four weeks following the initial contact. This study was approved by the Institutional Review Board of Ohio University in (2015).

Instrument Development

A pilot study was conducted to evaluate the reliability and validity of the survey instrument as it was developed by combining already established instruments or subscales into a single assessment tool. The instrument for the study was divided into four sections: Section A- demographic and leisure participation information (13 items); Section B- psychological outcomes of leisure participation (42 items); Section C- leisure satisfaction (24 items); and Section D- subjective well-being (5 items). Pre-validated scales were used for Sections B through D: Recovery Experience Questionnaire (REQ) (Sonnetag & Fritz, 2007); Basic Psychological Needs Scale (BPNS) (Ilardi et al., 1993); Engagement in Meaningful Activities Survey (EMAS) (Goldberg et al., 2002); Leisure Satisfaction Scale (LSS) (Beard & Ragheb, 1980); Subjective Happiness Scale (SHS) (Lyubomirsky & Lepper, 1999).

Analysis

Recreation activities were grouped as (a) indoor recreation (e.g., working out, basketball, indoor cardio) or (b) outdoor recreation (e.g., rock-climbing, nature hiking, mountain biking). Two researchers reviewed recreational activities provided individually in order to establish clear guidance in grouping. Next, each researcher compared groupings in order to identify areas of variation until consensus was reached. In qualitative analysis, two or more researchers commonly perform an independent analysis of the data similar to what was used in this study to increase the validity of the results (Creswell & Creswell, 2017; Holland et al., 2018). To compare the differences between student groups (indoor vs. outdoor recreation) through the DRAMMA model, t-tests were utilized to compare indoor and outdoor recreation choices with SWB, then again for leisure satisfaction. MANOVA tests were performed to analyze the psychological mechanisms of the DRAMMA model, the differences between indoor and outdoor recreation choices, and SWB, then again for leisure satisfaction. In order to further understand the relationship between DRAMMA indicators, SWB and leisure satisfaction in both indoor and outdoor recreation participation, path analysis models were created and tested. These models replicated the path model tested by Twilley (2017) which is based on the theoretical path model proposed by Newman et al. (2014). The theoretical path models show the 5 mechanisms of the DRAMMA model as exogenous variables, leisure satisfaction as an endogenous variable to SWB.

FINDINGS

Following data cleaning and removal of outliers, our final sample included 704 surveys. Our sample included freshmen (27.8%), sophomores (22.7%), juniors (23.4%), and seniors (26.1%). Female respondents represented 64% of our sample. Participants ranged in age from 18 (12.1%) to >22 (10.5%) with 19 years old (24.9%) comprising the largest age group (Appendix 1).

Reliability estimates for all 5 DRAMMA subscales were at or above the acceptable range (Citation): Detachment-Recovery, $\alpha = .791$; Autonomy, $\alpha = .678$; Mastery, $\alpha = .633$; Meaning, $\alpha = .864$; Affiliation, $\alpha = .834$. The reliability testing results for the leisure satisfaction and the SWB measure were: Leisure Satisfaction Scale, $\alpha = .886$; Subjective Happiness Scale, $\alpha = .861$. When evaluating Cronbach’s Alpha greater than 0.90 is excellent, above 0.80 is good, above 0.70 is acceptable, while above 0.60 is questionable but when dealing with psychological constructs values below 0.70 can be expected (Field, 2009).

Q1: Is There a Difference in Subjective Well-being Between Indoor and Outdoor Recreation Participants?

Outdoor recreation participants demonstrated a 0.27 (95% CI, -0.52 to -0.025) greater score in SWB than the indoor recreationalists, as depicted in (Table 1). An independent t-test indicated a significant difference in the SWB score between outdoor and indoor recreation participants ($p=0.03$). A relatively small effect size was observed between the population means (0.23).

Table 1. Independent T-Test Results for SWB Score Between Indoor and Outdoor Recreation Participants

Recreation	<i>n</i>	Mean	SD	SWB Score	<i>t</i>	<i>p</i>	Cohen’s d
Indoor	591	4.89	1.23		-2.165	0.03	0.23
Outdoor	113	5.17	1.22	+0.27			

Q2: Is There a Difference in Leisure Satisfaction Between Indoor and Outdoor Recreation Participants?

An independent samples t-test recorded a 0.4 (95% CI, -0.48 to -0.32) higher result in Leisure Satisfaction for outdoor recreation than indoor recreation and revealed a significant difference in the Leisure Satisfaction score between the population means ($p=0.001$). A large effect size was observed between the outdoor and indoor recreation groups (0.85) (Table 2).

Table 2. Independent Samples T-Test Results for Leisure Satisfaction (LS) Score Between Indoor and Outdoor Recreation Participants

Recreation	<i>n</i>	Mean	SD	LS Score	<i>t</i>	<i>p</i>	Cohen’s d
Indoor	590	3.91	0.55		-9.5	0.001	0.85

Q3: Do the 5 Psychological Mechanisms of the DRAMMA Model Predict SWB in Indoor and Outdoor Leisure Participants?

Pearson Correlation Analysis

A Pearson correlation coefficient analysis was conducted among each of the 5 DRAMMA mechanisms and SWB (Table 3). Coefficients between .10 and .29 represent a small relationship, coefficients between .30 and .49 represent a moderate relationship, and coefficients above .50 indicate a large relationship (Field, 2009). Autonomy held a significant positive correlation with Mastery ($r = 0.44, p < .001$), Affiliation ($r = 0.37, p < .001$), Meaning ($r = 0.29, p < .001$), Detachment-Recovery ($r = 0.29, p < .001$), Leisure Satisfaction ($r = 0.20, p < .001$), and SWB ($r = 0.18, p < .001$). Mastery held a significant positive correlation with Meaning ($r = 0.61, p < .001$), Leisure Satisfaction ($r = 0.50, p < .001$), Affiliation ($r = 0.35, p < .001$), Detachment-Recovery ($r = 0.17, p < .001$) and SWB ($r = 0.26, p < .001$). Affiliation held a significant positive correlation with Meaning ($r = 0.21, p < .001$), Detachment-Recovery ($r = 0.12, p = .002$), SWB ($r = 0.27, p < .001$) and Leisure Satisfaction ($r = 0.44, p < .001$). Meaning held a significant positive correlation with Detachment-Recovery ($r = 0.24, p < .001$), SWB ($r = 0.26, p < .001$) and Leisure Satisfaction ($r = 0.69, p < .001$) indicating a large relationship. Detachment-Recovery held a significant positive correlation with Leisure Satisfaction ($r = 0.18, p < .001$) and SWB ($r = 0.12, p < .001$). Leisure Satisfaction held a significant positive correlation with SWB ($r = 0.31, p < .001$).

Table 3. Pearson Correlation Matrix among Variables

Variable	1	2	3	4	5	6	7
1. Autonomy	-						
2. Mastery	0.44*	-					
3. Affiliation	0.37*	0.35*	-				
4. Meaning	0.29*	0.61*	0.21*	-			
5. Detachment-Recovery	0.29*	0.17*	0.12*	0.24*	-		
6. Leisure Satisfaction	0.20*	0.50*	0.44*	0.69*	0.18*	-	
7. SWB	0.18*	0.26*	0.27*	0.26*	0.12*	0.31*	-

* Indicates a statistically significant relationship of $p < .001$

Multiple regressions were used to determine if the five psychology mechanisms of the DRAMMA model predict SWB in indoor and outdoor recreation participants. The model was found not to be a strong predictor of SWB in either indoor participations [explaining 6.5% of the variance ($df = .5; F = 9.18; p < .001$)] or outdoor recreation participants [explaining 7.2% of the variance ($F = 2.74; p < .05$)]. Regarding indoor recreation participants, two of the five mechanisms were identified as significant predictors of SWB including affiliation ($p < .001$) and meaning ($p < .001$). For outdoor recreation participants, only one mechanism was identified as a significant predictor of SWB [meaning ($p < .05$)] (Table 4).

Table 4. Multiple Regression with the Psychological Mechanisms Predicting SWB

Variable	<i>Indoor Recreation</i>					<i>Outdoor Recreation</i>				
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Detachment/Recovery	.072	.027	.083	1.06	.208	.052	.041	.033	1.40	.331
Affiliation	.056	.052	.043	.522	<.001	.076	.012	.103	.331	1.12
Mastery	-.131	.059	-.151	-1.113	.122	.003	.060	-.172	.023	.056
Meaning	.372	.102	.285	3.08	<.001	.412	.087	.238	2.83	.005
Autonomy	-.003	.055	-.010	-.046	.754	-.011	.101	-.002	-.101	.814

Indoor Recreation R Square = .065; Outdoor Recreation R Square = .072

R squared is a goodness of fit measure that informs researchers how well the regression model explains observed data (Hayes, 2021). The higher the R square, the better a model explains all the variation in the response variable around its mean. The R² for indoor recreation was 65% and the R² for outdoor recreation was 72% indicating the regression model did a good job explaining the observed data.

Q4: Do the 5 psychological Mechanisms of the DRAMMA Model Predict Leisure Satisfaction in Indoor and Outdoor Leisure Participants?

Multiple regressions were used to determine if the five psychology mechanisms of the DRAMMA model predict leisure satisfaction in indoor and outdoor recreation participants. The model was found to predict leisure satisfaction in indoor [explaining 60.7% of the variation (F = 29.74; p <.001)] and outdoor recreation participants [explaining 56.2% of the variation (F = 29.74; p <.001)]. Regarding indoor recreation participants, four of the five mechanisms were identified as significant predictors of leisure satisfaction including meaning (p <.001), affiliation (p <.001), mastery (p <.002) and autonomy (p <.001). For outdoor recreation participants, three of the five mechanisms were identified as significant predictors of leisure satisfaction including meaning (p <.001), affiliation (p <.001) and detachment-recovery (p <.05) (Table 5).

Table 5. Multiple Regression with the Psychological Mechanisms Predicting Leisure Satisfaction

Variable	<i>Indoor Recreation</i>					<i>Outdoor Recreation</i>				
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Detachment/Recovery	.166	.013	.023	1.56	.361	1.02	.040	.160	1.43	<.05
Affiliation	.075	.053	.140	.122	<.001	.132	.002	.112	.521	<.001
Mastery	-.032	.115	-.022	-.103	<.002	.001	.062	-1.12	.043	.126
Meaning	.312	.105	.142	2.28	<.001	.368	1.21	.418	1.63	<.001
Autonomy	-.017	.077	-.009	-.191	<.001	-.155	.101	-.012	-.001	1.014

Indoor Recreation R Square = .061; Outdoor Recreation R Square = .056

Q5: How Well Does the DRAMMA Model Explain SWB in a College Student Population Who Engage in Indoor Recreation?

To answer research questions 5 and 6, we replicated the path model tested by Twilley (2017) which is based on the theoretical path model proposed by Newman et al. (2014). The theoretical path models show the 5 mechanisms of the DRAMMA model as exogenous variables, leisure satisfaction as an endogenous variable to SWB.

Indoor Recreation

Figure 1 / Table 6 shows the standardized estimates for the Path Diagram of the DRAMMA model for indoor recreation participants when accounting for leisure satisfaction, which is the basis for testing the overall model fit. Insignificant paths were included in the model based on relevance in the theoretical model (Hancock et al., 2010). Two different fit indices are reported for each model with the first being the Normed Fit Index (NFI) that assumes that all measured variables are uncorrelated with values closer to 1 indicating a very good fit and a value above .9 being a good fit. The NFI was .981 for the theoretical model. The second index is the Comparative Fit Index (CFI), which is a revised version of the NFI as it takes into account sample size. The CFI was .985, with anything above .9 being a good fit, with above .95 being an excellent fit. The RMSEA was 0.08.

Figure 1. Theoretical Path Model: Indoor Recreation

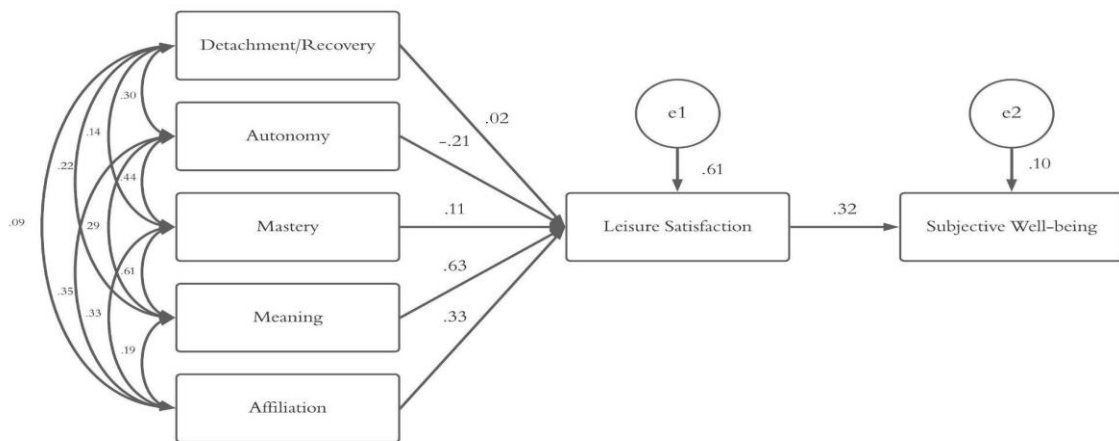


Table 6. Theoretical Path Model Fit: Indoor Recreation

Model	SRMR	RMSEA	CI LO 90	CI HI 90	NFI	CFI
Default model	.07	.078	.047	.112	.981	.985
Saturate model	-	-	-	-	1.00	1.00
Independence model	-	.31	.30	.33	.000	.000

After modifying the model to account for affiliation’s influence on SWB, the NFI was .993, the CFI was 0.996, and the RMSEA was 0.04, both indicating excellent fit [Figure 2 / Table 7 (Hancock, Stapelton & Muller, 2010)].

Figure 2. Modified Path Model: Indoor Recreation

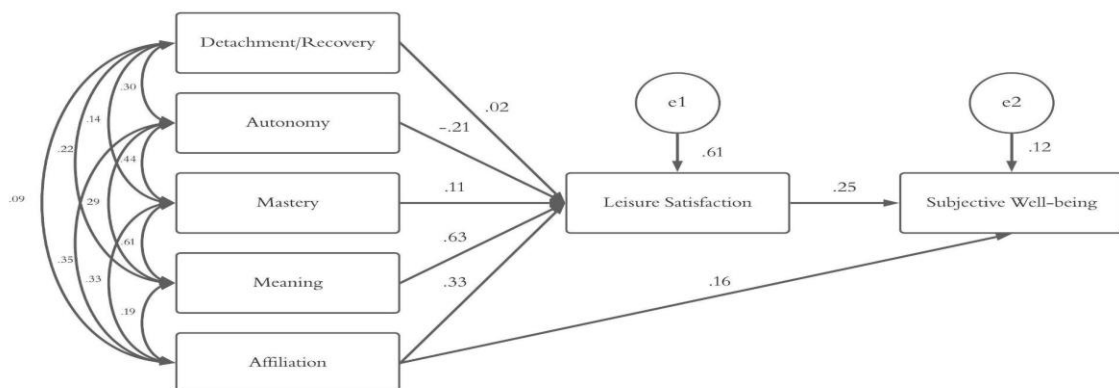


Table 7. Modified Path Model Fit: Indoor Recreation

Model	SRMR	RMSEA	CI LO 90	CI HI 90	NFI	CFI
Affiliation to SWB	.026	.042	.001	.084	.993	.996

Q6: How Well Does the DRAMMA Model Explain SWB in a College Student Population Who Engage in Outdoor Recreation?

Figure 3 / Table 8 shows the standardized estimates for the Path Diagram of the DRAMMA model for outdoor recreation participants when accounting for leisure satisfaction, which is the basis for testing the overall model fit. Insignificant paths were included in the model based on relevance in the theoretical model (Hancock et al., 2010). The NFI was .917, CFI was 0.931, and the RMSEA was 0.16.

Figure 3. Theoretical Path Model: Outdoor Recreation

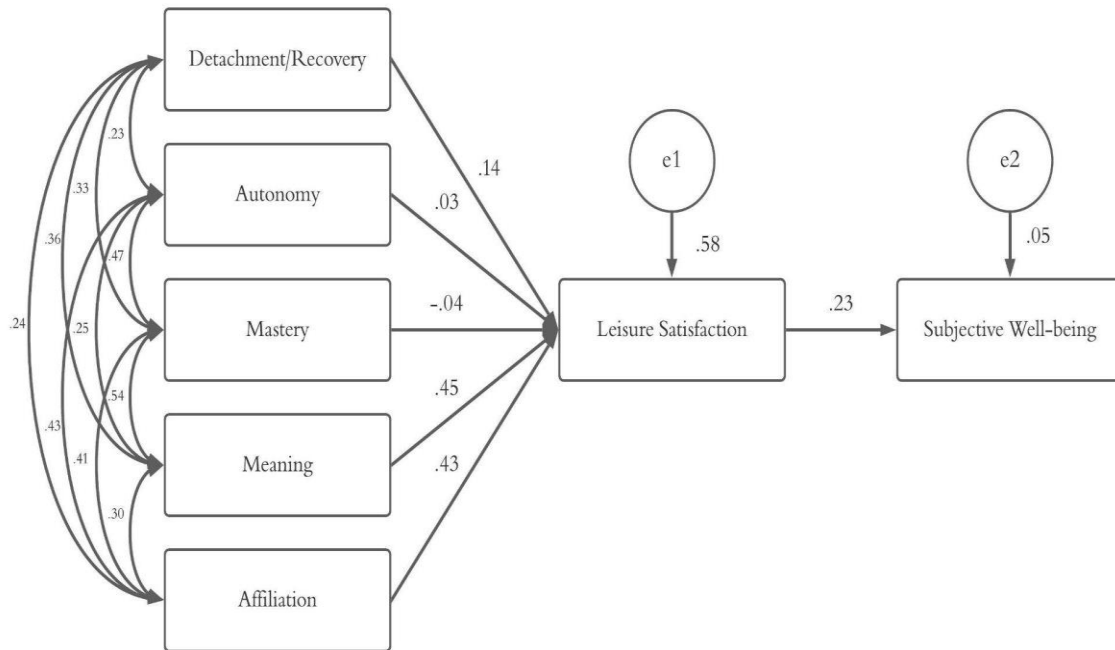


Table 8. Theoretical Path Model Fit: Outdoor Recreation

Model	SRMR	RMSEA	CI LO 90	CI HI 90	NFI	CFI
Default model	.12	.16	.09	.24	.917	.931
Saturate model	-	-	-	-	1.00	1.00
Independence model	-	.31	.27	.34	.000	.000

After modifying the model to account for affiliation’s influence on SWB, the NFI was .983, the CFI was 0.999, and the RMSEA was 0.02, both indicating excellent fit [Figure 4 / Table 9 (Hancock et al., 2010)].

Figure 4. Modified Path Model: Outdoor Recreation

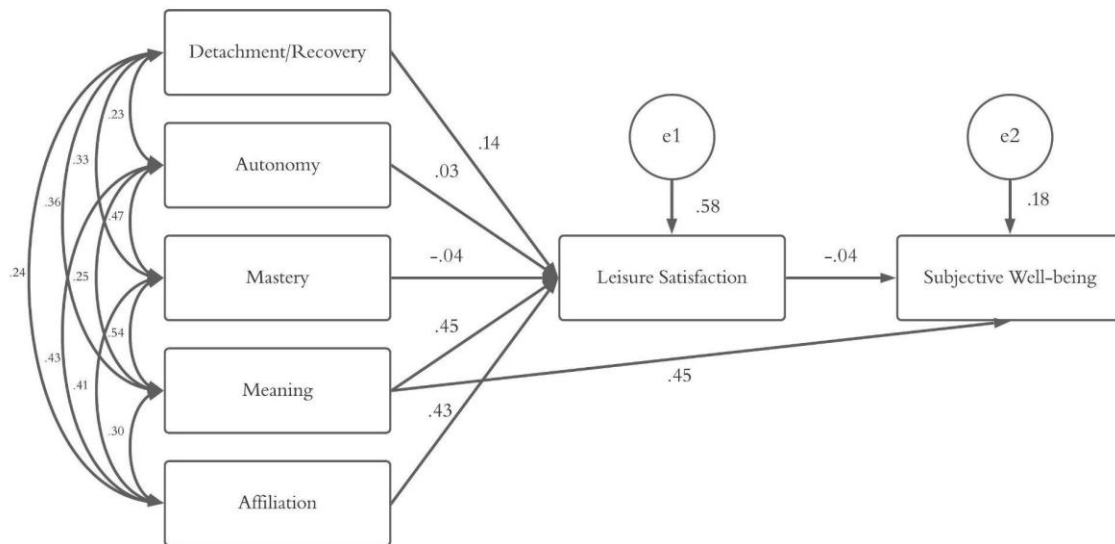


Table 9. Modified Path Model Fit: Outdoor Recreation

Model	SRMR	RMSEA	CI LO 90	CI HI 90	NFI	CFI
Meaning to SWB	.018	.022	.001	.146	.983	.999

The RMSEA, is essentially the error term for the model, indicates how well the model with optimally chosen parameter estimates would fit the population’s covariance matrix and is considered one of the most informative fit indices. The RMSEA and its associated 90% confidence interval should fall below .05 to be considered excellent and .08 to be acceptable (Hooper et al., 2008). The RMSEA for the theoretical model was .02. 4 degrees of freedom, Chi Squared= 27.607, $p < .001$, which is likely a result of a large sample size (Hooper et al., 2008).

DISCUSSION

This study attempts to understand the role of leisure engagements, in particular indoor versus outdoor leisure, in predicting college students’ leisure satisfaction and SWB. We found that college students who participated in outdoor recreation indicated higher SWB and leisure satisfaction than indoor recreation participants. These findings support previous literature associating participation in outdoor recreation activities with a range of beneficial individual and group-development mental health outcomes (e.g., decreased stress, increased happiness, mental rejuvenation, prosocial behaviors, elevated mindfulness) (Hattie et al., 1997; Holland et al., 2018; Houge & Brymer, 2020; Pretty & Barton, 2020; Thomsen et al., 2018). In the context of an educational setting, student participation in outdoor recreation has been associated with both personal (e.g., increased self-confidence, advancement of hard and soft skills, self-awareness) and academic-development outcomes (e.g., increased acceptance of challenge, participation in reflective practices, increased confidence in one's ability to succeed) (Holland et al., 2020).

Research investigating the influence of specific outdoor recreation elements is limited. However, of the few studies that have investigated this question (e.g., Furman & Sibthorp, 2011; Goldenberg & Soule, 2015; Holland et al., 2018; Holland et al., 2020) three key elements are commonly identified as influential towards participant outcomes. These elements include exposure to the natural environment [i.e., novelty (e.g., Daniel et al., 2010)], engagement in experiential forms of learning (e.g., Gassner & Russell, 2008), and unique social interactions [i.e., team-based activities (e.g., Bell & Holmes, 2011)]. Though not in the scope of this study, these influential elements of outdoor recreation activities may have contributed to the increased SWB and leisure satisfaction in our sample. Further research should aim to investigate the unique influential elements associated with increased SWB and leisure satisfaction in college students participating in outdoor recreation.

Newman et al.'s (2014) DRAMMA model was found not to predict SWB differences in college students participating in indoor vs. outdoor recreation. However, DRAMMA mechanism meaning was associated with increased SWB for both groups. Meaning refers to the process where individuals gain something important or valuable in life through leisure (Iwasaki, 2008; Newman et al., 2014). Leisure is a catalyst for developing meaning as it facilitates positive emotions, positive self-identity, social connections, and opportunities for learning (Bailey & Fernando, 2012; Iwasaki, 2007). In fact, many professional recreation agencies integrate experiential learning methods aimed at assisting participants in identifying generalizations that can be transferred from the initial recreation experience into diverse contexts of their personal and professional lives (Holland et al., 2018). The strong relationship between meaning found through leisure participation and SWB in this study is supported by previous research (Iwasaki, 2007; Wang & Wong, 2011).

Another component to testing the DRAMMA model was to understand if the five psychological mechanisms predict leisure satisfaction. As established in the literature review, the five psychological mechanisms are connected to leisure satisfaction. For indoor recreation participants, four of the five mechanisms were identified as significant predictors of leisure satisfaction including meaning, affiliation, mastery, and autonomy. For outdoor recreation participants, three of the five mechanisms were identified as significant including meaning, affiliation, and detachment-recovery. The first two (meaning and affiliation) explain that high measurements of leisure satisfaction are dependent upon participant success developing a sense of meaning through leisure experiences. Our findings indicate that students gained personal meaning through their leisure experiences thus increasing their leisure satisfaction. Identity development is recognized as a key process of college student flourishing (Evans et al., 2009) and leisure experiences are commonly associated with both advancements in identity development and increased happiness (Holland et al., 2018; Wang & Wong, 2011). Our findings support existing literature investigating the connections between identity development and leisure experiences, and provide further insight into the influence of meaningful leisure engagements for college students (Evans et al., 2009). Our findings that mastery and autonomy were not identified as significant are supported in existing literature as individual and relaxation-oriented activities tend to be familiar and routine, allowing individuals to escape the stress of novelty. Additionally, people expect to experience relaxation from activities that are not challenging and do not require advancements in their invested skill (Tinsley & Eldredge, 1995).

Affiliation and a sense of belonging are also important to leisure satisfaction and SWB. Campus recreation can contribute to a sense of community and belonging for students (Elkins et al., 2011). More specifically, outdoor programs have been shown to foster social support and the establishment of relationships (Andre et al., 2017; Illagan et al., 2020). Therefore, when

meaningful engagements provide students the ability to form and advance social connections (affiliation), leisure experiences becomes powerful predictors of leisure satisfaction.

Interestingly detachment-recovery did not predict leisure satisfaction for indoor recreation participants, which once again is surprising considering the strong association between leisure experiences facilitating detachment-recovery experiences in individuals. Similar to SWB the question of context must be considered as detachment-recovery was developed within the framework of leisure creating opportunities for recovery experiences from work and not school. Indoor recreation participants in this study did not feel the need for detachment-recovery in order to experience leisure satisfaction. The findings are not saying detachment-recovery is not an important component of leisure satisfaction but when considered with the four other psychological mechanisms detachment-recovery does not predict leisure satisfaction in the study's sample. It would be interesting in future research to consider how stress level and time spent on leisure activities influences one's leisure satisfaction.

CONCLUSION

Collegiate recreation professionals should champion the role outdoor recreation and leisure can play in student happiness and well-being. Considering the findings and literature on outdoor recreation and nature sports, promoting these programs and opportunities may foster and enhance psychological resilience, positive mental health and well-being at a time when many students are struggling (Shellman & Hill, 2017). Recreation professionals can intentionally cultivate well-being on campus through the provision of intentional and focused outdoor recreation programs, which can make a positive and lasting contribution to the well-being of students.

Limitations

This study intended to gain a deeper understanding of the role of leisure activities, in particular indoor versus outdoor leisure, in predicting leisure satisfaction and an individuals' SWB. The limitations of the study include:

1. The study sampled only undergraduate college students at one large Midwestern University.
2. The research involved self-reported data that has potential issues of honesty, introspective ability, memory recall, and comprehension.
3. Researchers have over-surveyed college students in past years, resulting in survey fatigue, which can impact response rate along with how accurately and sincerely respondents answer questions. However, because there are no incentives for participating the respondents who do fill out the survey were likely intrinsically motivated.

As a result, generalizations of these findings should be made with caution.

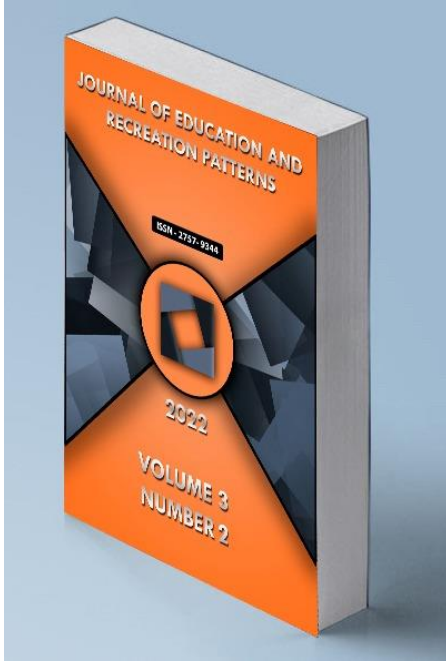
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The Relationship Between the Athlete Identities of Footballers and Their Level of Commitment to Sports

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The Relationship Between the Athlete Identities of Footballers and Their Level of Commitment to Sports

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ABSTRACT

This study aims to evaluate the relationship between the athlete identities and their commitment to sports in terms of whether amateur and professional licensed footballers who are playing football in local and amateur football clubs differ according to various demographic characteristics. Footballers of the 1st Amateur, 2nd Amateur, and Regional Amateur Leagues registered in the Elazığ Amateur Sports Clubs Federation participated in the research. "Athlete Identity Scale" was developed by Brewer and Cornelius (2001) and adapted to Turkish by Öztürk and Koca (2013) and "Athlete Commitment Scale" was developed by Kayhan, Bardakçı, and Caz (2020) developed by Guillen and Martinez-Alvarado (2014) were used as data collection tools in the study. As a result of the research, while there was a significant difference in the athlete identity according to the license level variable of the football players, there was no significant difference in the level of commitment to sports. While there was a significant difference according to the league level, infrastructure training, age variable, and education status variable of the footballers, there was no significant difference according to the athlete year variable.

Keywords: Athletic Identity, Football. Sport Engagement



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INTRODUCTION

Many professions and sports activities in society impact our lives because they have become an important part of our identity over time, contribute to humanity's development, and affect society's progress. Achieving and maintaining success in sports is closely related to the athlete's identity and level of commitment to the sport, as well as the physical competence of the athlete.

Sports is physical activity that includes competition, sports activities are carried out in an organized structure with a certain framework that includes rules and objectives (Temel & Tükel, 2021). Sport is an important element that is deeply involved in the social life of today's people and shapes the sociological structure. For this reason, sports are increasingly attracted by people, attracting and connecting many people (Uslu, 2016). In addition to the physiological and psychological benefits of sports, it has also been proven that it limits the possibility of developing obesity, reduces the occurrence of cardiovascular diseases and increases the quality of life of individuals (Pennington, 2021). Sports are body movements or intense muscle efforts performed in the form of individual or collective games, habits aimed at providing physical, spiritual, nervous, and intellectual relaxation and development, or competitions organized within a formal framework, in a certain order or precise rules, according to scientific methods (Tek, 2020). Sport refers to the psycho-social concept that helps the socialization of the individual by giving people a sense of personal and social identity and a sense of group membership, as well as being a set of physical activities. Sport refers to the competitive use of the ability to increase one's self-development, self-actualization, physical and mental skills. Sports can also support social and cultural identities and the construction of national identities (Küçük & Koç, 2015).

There are many types of sports; one is football, which has an important place in our lives. Undoubtedly, the characteristics of the footballers who play the game in a popular sport and their athlete identities are also very important.

Identity, which is a subject handled from different angles in many sciences, is defined by the Turkish Language Association as the whole of the signs, qualities, and characteristics that show what kind of person a human being is as a social being (TLA, 2022). Identity is a concept related to the social roles adopted by individuals in societies where people lead their lives and how people express themselves depending on these roles (Özdil, 2017). Erikson defined identity as a process that unites personality and connects the individual to the social world, and theories on identity development have led to research into how identity changes over time (Erikson, 1968). Identity development is inextricably linked to the essence of the individual as well as to the essence of the individual's common culture (Kidwell et al., 1995). Beamon emphasizes that one's identity consists of selfness, self-view, social identity, and how others look at you. Elite athletes are largely linked to their identity as an athlete, especially as they receive praise and appreciation from others for their physical abilities and the only way they see themselves as successful (Beamon, 2012). Athlete identity is defined as "the degree to which an individual identifies with the role of an athlete". This concept is an important aspect of sports participation, as it influences the relationships with teammates and the experiences that one can have in sports, in addition to both current and future efforts with sports. Athlete identity is also a strong indicator of one's sustainability in a sport (Griffith & Johnson, 2002). Athlete identity is the individual's acceptance of sports by transforming it into a way of life or seeing it as a part of his life as a result of internalizing it (Ercic, Wylleman & Zupancic, 2004).

Sports psychology research on athlete identity began seriously in the 1990s, and Britton Brewer was one of the first researchers to propose the concept of athletic identity and systematically examine this area of interest. Athlete identity refers to the degree of power and

privilege with which a person identifies with the role of an athlete, or the degree of special interest in sports relative to other pursuits or activities in life (Brewer, Van Raalte, Linder, 1991). According to the perceptions of people, athlete identity plays a social role. People who are valued, approved, and have athlete characteristics by society increase their self-confidence of athletes when this situation is explained to them and they feel more like athletes, which contributes to the formation of the identity of the athlete (Reifsteck, 2011).

Athlete identity is also one of the psychological determinants of sports commitment, that is, the level at which the person identifies with the role of the athlete is directly related to the amount of one's commitment to sports.

The term commitment is used in psychology to describe a number of factors that may explain why people maintain relationships or engage in certain activities (Eccles, Harold, 1991). Commitment has been understood as a psychological tendency that represents a desire' and a decision to continue participating in sports' (Hassell, Sabiston & Bloom, 2010). Previous research in the field of sports psychology shows that "commitment to sports is related to participation and permanence in sports" and is defined as "a general psychological condition that represents the desire and determination to continue participating in a particular athletic program, a particular sport or sport"(Hagiwara & Isogai, 2014). Engagement is an integral part of sports participation, as athletes need to desire to learn and feel connected to their sport to continue to be part of the team.

To bring out commitment, athletes need to enjoy what they are doing and also make a personal investment in the sport in terms of time, finances, or effort. It is also important that in sports there is social support from others and opportunities to benefit from sports, as well as a social structure and atmosphere that creates norms within the sport, creating a sense of obligation to return. These benefits can include things like relationships with others, health and fitness benefits, and mastery of a skill (Chu & Wang, 2012).

Studies examining the relationship between athletes' athlete identity and level of commitment to sports are quite limited in the literature. Studies are mostly focused on students and young athletes.

Martin et al. examined how the social identities of young athletes who were students had an impact on their commitment to sport and effort. It has been reported that commitment and effort are important in identifying the athlete with a group in the individual and group analysis (Martin et al., 2018).

Chen examined the impact of athletic participation on university students by examining the impact of athlete identity, commitment to sports, and sports participation, emphasizing that further support of student-athletes and increasing athletic participation are important for participants to build a personality and improve performance (Chen, Snyder & Magner, 2010).

Edison compiled the studies on athlete identity in young athletes and determined that burnout was less common in athletes with high athlete identity and that they had a higher game history (Edison, Christino & Rizzone, 2021).

Mitchell emphasized the importance of the good psychological status of athletes in professional sports in his study to determine the athlete identity levels of elite British football referees. (Mitchell et al., 2014).

Siyataş et al.; To determine the differences between the levels of sports commitment of athletes engaged in individual and team sports and the relationship between their age and sports commitment, it was found that athletes who engaged in sports individually had higher

sports commitment than athletes engaged in team sports and that their sports commitment decreased as their age increased (Siyahtaş et al., 2020).

In the study conducted by Sivrikaya and Biricik; The level of commitment of ski athletes, known as individual sports, and the loyalty of footballers in the football branch from Kelecek and Koruç team sports to sports were investigated. When the results obtained were examined according to the averages, it was seen that the loyalty of individual athletes to the team athletes, that is, the commitment of ski athletes to sports was higher than that of footballers (Sivrikaya & Biricik 2019; Kelecek & Koruç, 2017).

Sivrikaya and Biricik (2019) In their study on athlete loyalty in elite skiers at the national team level, they found that female athletes had higher athlete engagement in the sub-dimension of dedication and enthusiasm compared to male athletes.

The Sportsmanship Identities and Sportsmanship Orientations of Kick Boxing Athletes made by Turan were examined with variables such as different education levels, age, sports year, and whether national athlete, it was determined that the perceptions of athlete identity increased in favor of national athletes and athletes participating in competitions at national level (Turan, 2021).

Yanar et al. examined the differences between the athlete identity perception and success motivation levels of tennis and badminton athletes in terms of gender, age groups, and sports year groups. While the athlete identity perception of tennis athletes was higher than that of badminton athletes, there was no significant difference in the athlete identity perception of the athletes in terms of gender (Yanar, Kırandı & Can, 2017).

As a result, Continuing sports, being successful, and being successful in sports today depend on both their athlete identities and their level of commitment to sports. The aim of this study is; To evaluate the relationship between the athlete identities and their commitment to sports of amateur and professional licensed footballers who play football in local and amateur football clubs in terms of whether they differ according to various demographic characteristics. Thus, it is thought that it is valuable in terms of contributing to the knowledge in the field of sports and guiding the way in terms of the findings obtained. In addition, our study is considered to be important in terms of showing that the athlete's identity and level of commitment to sports are important factors for teams aiming for success.

METHOD

Scope and Method of Research

The universe of this research consists of 1st Amateur, 2nd Amateur, and Regional Amateur League footballers registered to the Elazığ Amateur Sports Clubs Federation. According to the letter dated 08.06.2022 and numbered 2022/53 from the Elazığ Amateur Sports Clubs Federation, it was determined that the number of 1st Amateur, 2nd Amateur, and Regional Amateur League players were 606 in the 2021-2022 football season. The study's sample size was calculated as 235 in the main universe sample size within the limits of 95% reliability with a margin of error of 5% (surveysystem.com access date, 10.10.2022) and the quantitative research method was used. The research data were obtained by applying the survey method to 254 people voluntarily to football players. The permission of the ethics committee required for the conduct of this study was obtained from the Munzur University Non-Interventional Research Ethics Committee with the decision dated 10.05.2022 and numbered 51985.

Data Collection Tools

The quantitative research method was used in this study. The data in question were obtained by applying face-to-face to 1st Amateur, 2nd Amateur, and Regional Amateur League players voluntarily with the survey method. The questionnaire was designed from a total of three sections and consisted of a total of 23 questions. The first part of the survey consists of 6 questions to determine the participants' demographic information.

In the second part of the questionnaire, the athlete identity scale with a 7-point Likert-type scale consisting of 3 sub-dimensions and 7 items developed by Brewer and Cornelius (2001) and adapted to Turkish by Öztürk and Koca (2013) was used. The athlete identity scale has 3 sub-dimensions: social identity, sports limitation, and negative affectivity. The scale was general reliability (Cronbach-Alpha:0.81) and the first sub-dimension was social identity (Cronbach-Alpha:0.69), the second sub-dimension was limited to sports (Cronbach-Alpha:0.79), and the third and last sub-dimension, negative affectivity (Cronbach-Alpha:0.59) (Öztürk ve Koca 2013). Footballers are asked to evaluate the survey questions as 1- I do not agree at all, 7- I completely agree.

In the third part of the survey, the sports commitment scale with a 7-point Likert-type scale consisting of 2 sub-dimensions and 10 items adapted to Turkish by Kayhan, Bardakçı, and Caz (2020) developed by Guillen and Martinez-Alvarado (2014) was used. The sub-dimensions of the sports commitment scale are focusing and being vigorous. The scale was general reliability (Cronbach-Alpha:0.91) and the first sub-dimension was the focusing (Cronbach-Alpha:0.91) and the second sub-dimension was vigorous (Cronbach-Alpha:0.77) (Kayhan, Bardakçı, Caz, 2020). Footballers are asked to evaluate the survey questions as 1- Never, 7- Always. General reliability (α) coefficients of our work on Elazığ 1st Amateur, 2nd Amateur, and Regional Amateur League players.

Table 1. Reliability Level

Dimensions	Cronbach Alpha
Athlete Identity	0,827
Social Identity Sub-Dimension	0,760
Sports Limitation Sub-Dimension	0,802
Negative Affectivity Sub-Dimension	0,652
Commitment to Sport	0,921
Focusing Sub-Dimension	0,898
Vigorous Sub-Dimension	0,849

Data Collection and Statistical Analysis

The research data were analyzed using SPSS (Statistical Package for Social Sciences) for Windows 22.0 program. First, descriptive statistical evaluations of demographic data were made, and then $n > 30$ Kolmogorov-Smirnov tests were performed to see whether the data were distributed normally. After the test, it was seen that the data were not distributed normally. Non-parametric tests (Mann-Whitney you and Kruskal Wallis) were used to determine whether the opinions of footballers about their athlete identity and sports commitment levels differed significantly according to various variables. Then, the discussion, conclusion, and suggestions section was included.

FINDINGS

In this section, statistical evaluation of the data was made and the results of the evaluation were shown in tables. The demographic characteristics of the participants are shown in the Table 2.

Table 2. Sampling Information

Variables		N (254)	%
License Level	Amateur	218	85,8
	Professional	36	14,2
League Level	1st Amateur	92	36,2
	2nd Amateur	99	39
	Regional Amateur	63	24,8
Have you received Infrastructure Training?	Yes	173	68,1
	No	81	31,9
Age	14-17	53	20,9
	18-21	59	23,2
	22-25	74	29,1
	26-29	26	10,2
	30-33	16	6,3
	34 and older	26	10,2
Education Status	Primary Education	19	7,5
	High school	84	33,1
	Associate Degree	21	8,3
	License	118	46,5
	Graduate	12	4,7
Year of Licensed Sportsmanship	1-3	96	37,8
	4-6	80	31,5
	7-9	32	12,6
	10 Years and above	46	18,1

When Table 2 is examined, 85.8% of the participants are amateurs and 14.2% are professionals. When we look at the league level of the footballers, it is seen that 36.2% are at the 1st Amateur level, 39% are at the 2nd Amateur and 24.8% are at the regional amateur league level. Regarding infrastructure education, we see that 68.1% have infrastructure education and 31.9% do not. While 20.9% of the footballers are in the 14-17 age range, 23.2% are in the 18-21 age range, 29.1% are in the 22-25 age range, 10.2% are in the 26-29 age range, 6.3% are in the 30-33 age range and 10.2% are 34 years or older. In terms of educational status, 7.5% were in primary education, 33.1% were in high school, 8.3% had an associate degree, 46.5% were at undergraduate, and 4.7% were at the graduate level. When we examine the licensed sportsman year, it is seen that 37.8% have been licensed athletes for 1-3 years, 31.5% for 4-6 years, 12.6% for 7-9 years, and 18.1% for 10 years or above.

Normality Test

The result of the statistical test to see whether the data was distributed normally in the research was given in the Table 3.

Table 3. Normality Test Results

Concepts	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	df	Sig
Athlete Identity	,196	254	,000	,852	254	,000
Social Identity Sub-Dimension	,192	254	,000	,838	254	,000
Sports Limitation Sub-Dimension	,205	254	,000	,857	254	,000
Negative Affectivity Sub-Dimension	,243	254	,000	,782	254	,000
Commitment to Sport	,161	254	,000	,834	254	,000
Focusing Sub-Dimension	,188	254	,000	,807	254	,000
Vigorous Sub-Dimension	,154	254	,000	,880	254	,000

*p<.05

When Table 3 is examined, the data were normally distributed and the results of the normality test were shown. Since $n > 30$, Kolmogorov Smirnov was taken into account, and according to the results obtained, since $p < 0.05$, the distribution was not normal and non-parametric tests were used.

The comparison of the opinions of the footballers on the scale of athlete identity and sports commitment levels according to the license level variable was shown in the Table 4.

Table 4. Comparison of Footballers' Views on Athlete Identity and Sports Commitment Levels Scale According to License Level Variable

	License Level	N	\bar{X}	Sd	Z	p
Athlete Identity	Amateur	218	5,66	1,08	-2,700	,007
	Professional	36	6,12	,78		
Sport Commitment Levels	Amateur	218	5,89	1,08	-1,957	,050
	Professional	36	6,21	,92		

*p<.05

In Table 4, a significant difference was found between the athlete identity groups in comparing the answers given by the footballers to the athlete identity questions according to the license level variable. In contrast, no significant difference was found between the sports commitment level groups.

The comparison of the opinions of the footballers on the scale of athlete identity and sports commitment levels according to the league-level variable was shown in the Table 5.

Table 5. Comparison of Footballers' Views on Athlete Identity and Sports Commitment Levels Scale According to League Level Variable

	League Level	N	\bar{X}	Sd	X ²	p
Athlete Identity	Amateur	92	5,94	,78	7,537	,023
	Amateur	99	5,64	1,25		
	Regional Amateur	63	5,52	1,01		
Sports Commitment Levels	Amateur	92	6,05	,89	9,386	,009
	Amateur	99	6,00	1,17		
	Regional Amateur	63	5,65	1,09		

*p<.05

In Table 5, there was a significant difference between the groups in comparing the license level and sports commitment levels of the answers given by the footballers to the athlete identity questions according to the league-level variable.

The comparison of the opinions of the footballers on the scale of athlete identity and level of commitment to sports according to the infrastructure education variable was shown in the Table 6.

Table 6. Comparison of Footballers' Views on Athlete Identity and Sports Commitment Levels Scale According to the Infrastructure Education Variable

	Infrastructure Education	N	\bar{X}	Sd	Z	p
Athlete Identity	Yes	173	5,91	,95	-4,232	,000
	No	81	5,33	1,15		
Sports Commitment Levels	Yes	173	6,17	,84	-4,821	,000
	No	81	5,43	1,29		

*p<.05

When Table 6 was examined, there was a significant difference between the groups in comparing the answers given by the footballers to the questions of athlete identity and sports commitment levels scale according to the infrastructure education variable.

The comparison of the opinions of the footballers on the scale of athlete identity and sports commitment levels according to the age variable was shown in the Table 7.

Table 7. Comparison of Footballers' Opinions on Athlete Identity and Sports Commitment Levels Scale According to Age Variable

	Age Variable	N	\bar{X}	Sd	X²	p
Athlete Identity	14-17 Years	53	6,30	,63	41,942	,000
	18-21 Years	59	5,78	1,01		
	22-25 Years	74	5,40	1,15		
	26-29 Years	26	5,57	,22		
	30-33 Years	16	5,23	,97		
	34 and Older	26	5,77	,94		
Sports Commitment Levels	14-17 Years	53	6,48	,51	24,051	,000
	18-21 Years	59	6,00	,99		
	22-25 Years	74	5,64	1,27		
	26-29 Years	26	5,81	1,24		
	30-33 Years	16	5,51	1,12		
	34 and Older	26	5,90	,81		

*p<.05

When Table 7 was examined, a significant difference was seen between the groups in comparing the athlete identity and sports commitment levels of the answers given by the footballers to the questions of athlete identity and sports commitment levels scale according to the age variable.

The comparison of the opinions of the footballers on the scale of athlete identity and sports commitment levels according to the variable of education status was shown in the Table 8.

Table 8. Comparison of Footballers' Opinions on Athlete Identity and Sports Commitment Levels Scale According to Education Status Variable

	Education Status	N	\bar{X}	Sd	X²	p
Athlete Identity	Primary Education	19	6,32	,90	20,095	,000
	High school	84	5,78	1,04		
	Associate Degree	21	5,69	1,21		
	Undergraduate	118	5,56	1,07		
	Graduate	12	6,07	,23		
Sports Commitment Levels	Primary Education	19	6,56	,42	14,737	,005
	High school	84	6,05	1,05		
	Associate Degree	21	5,78	1,06		
	Undergraduate	118	5,77	1,14		
	Graduate	12	6,05	,64		

*p<.05

When Table 8 was examined, there was a significant difference between the groups in comparing the answers given by the footballers to the questions of athlete identity and sports commitment levels scale according to the educational status variable.

The comparison of the opinions of the footballers on the scale of athlete identity and sports commitment levels according to the variable of the year of licensed sportsmanship was shown in the Table 9.

Table 9. Comparison of Footballers' Opinions on Athlete Identity and Sports Commitment Levels Scale According to the Variable of Licensed Sportsmanship Year

	Licensed Sportsmanship Year	N	\bar{X}	Sd	X²	p
Athlete Identity	1-3 Year	96	5,78	1,08	2,229	,513
	4-6 Year	80	5,58	1,14		
	7-9 Year	32	5,74	,84		
	10 Years and Above	46	5,82	,94		
Sports Commitment Levels	1-3 Year	96	5,97	1,06	2,037	,565
	4-6 Year	80	5,92	1,13		
	7-9 Year	32	6,08	,85		
	10 Years and Above	46	5,78	1,12		

*p<.05

When Table 9 was examined, there was no significant difference between the groups in comparing the answers given by the footballers to the questions of athlete identity and sports commitment levels scale according to the variable of licensed sportsmanship year.

DISCUSSION AND CONCLUSION

In this study, to evaluate the relationship between the athlete identities and their commitment to sports of amateur and professional licensed footballers who play football in local and amateur football clubs in terms of whether they differ according to various demographic characteristics. Although various studies on athlete identity and sports commitment levels have been seen in the literature research, it is seen that the number of studies examining them together is limited.

According to the data obtained in the research, it is seen that the perceptions of the athlete identity and sports commitment levels of the footballers show a significant difference in the athlete identity according to the undergraduate level variable they have, and when the averages are examined, it is seen that the averages of the footballers with professional licenses are higher than the amateur license footballers. There was no significant difference between the levels of commitment to sports. According to the results of the research, the study conducted by Işık, (2018) on the athlete identity variable is not similar. It is seen that the footballers show significant differences in both their athlete identity and sports commitment levels according to the league level variable, and the average of the athlete identity and sports commitment levels of the 1st Amateur League footballers is higher. While this result obtained from the research shows similarity to the studies of Ermisket (2022), it does not show similarity to the studies of Menteş (2022). According to the infrastructure education variable, it is seen that the footballers show a significant difference in both their athlete identity and sports commitment levels and that the average of the athlete identity and sports commitment levels of the footballers who receive infrastructure training is higher. According to the age variable of the footballers, there was a significant difference between the athlete identity and the level of commitment to the sport and it was seen that the average of the footballers in the 14-17 age range was higher than the others. In their study, Siyahtaş et al. (2020) stated that the level of commitment to sports decreases as the age of the athletes increases. In parallel with the results of the research, Uluç and Akçakoyun (2021), Siyahtaş et al. (2020), Horton, and Mack (2000) show similarities in their studies, while Peke (2020), Yerlikaya (2019), Madak et al., (2021) do not show similarities in their studies. In the study conducted by Weiss and Weiss. (2013), the level of commitment to sports in gymnasts in an age group similar to football players was higher than in other age groups. According to the variable of the educational status of the footballers, there was a significant difference between the athlete identity and the level of commitment to sports, and it was seen that the average of those whose education status was primeri education was higher than the others. In parallel with the results of the research, Ermisket (2022), Peke (2020), and Yerlikaya (2019) show similarities in their studies, while Madak et al. (2021), Uzgür, Pekel, Aydos (2021) do not show similarities in their studies. According to the variable of the licensed sports year of the footballers, there was no significant difference between the athlete identity and sports commitment levels. This result shows that the year of sportsmanship does not affect athlete identity and sports commitment levels. This result is similar to Yanar, Kiranardı, Can (2017), Işık (2018), and Çetinkaya (2015), while Uluç and Akçakoyun (2021), Ermisket (2022) are not similar. Uluç and Akçakoyun (2021), in their study, stated that among Bocce athletes, those who have a sports age of 11 years or more have a higher level of commitment to sports. Ermisket, on the other hand, found a significant difference in the dimension of commitment to sports according to the basketball players' basketball playing time in his study. This result does not show parallelism with our study.

Limitations and Recommendations

As a result, since the studies on athlete identity and athlete loyalty are quite limited, these studies can be carried out on other amateur and professional athletes, and different results

can be reached and contribute to the literature. In addition, this qualitative research can be obtained from other research methods to obtain more in-depth results. Since athlete identity and athlete loyalty are factors that affect each other, it is recommended to evaluate these concepts among coaches and managers, who are other actors in sports, and to carry out studies to strengthen athlete identity and athlete loyalty.

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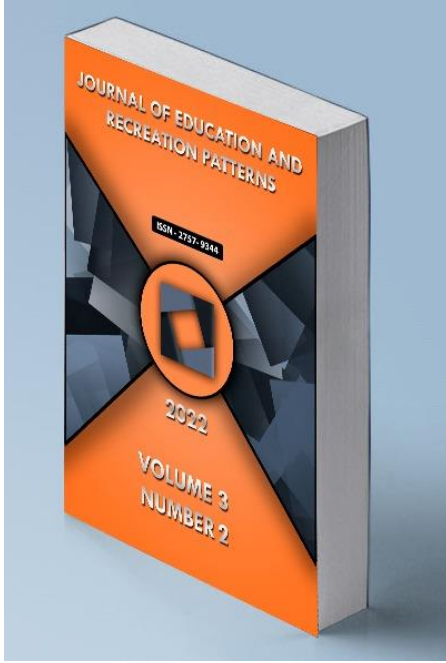
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Investigation of the Relationship Between Psychological Comfort Levels and Organizational Commitment Levels of Physical Education Teachers

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ABSTRACT

This research aims to examine the relationship between psychological comfort levels and organizational commitment levels of physical education teachers. The universe of the research consisted of physical education teachers working in Elâzığ province. The study's sample group consisted of 211 people, 148 male, and 63 female, from physical education teachers working in Elâzığ. The "Psychological Comfort Scale" and "Organizational Commitment Scale" were used as data collection tools. Dependent-Sample T-test, One Way Anova, and Pearson Correlation Analysis were used in the analysis of the data. In terms of gender and educational status variables, there was no significant difference in the organizational commitment sub-dimensions and psychological commitment levels of physical education teachers. Regarding age, occupational year, and marital status variables, significant differences were found in organizational commitment sub-dimensions and psychological comfort levels. According to the findings obtained, as the age and occupational year increased, the organizational commitment and psychological comfort levels of physical education teachers decreased. Single teachers were found to have higher levels of organizational commitment and psychological comfort than married teachers. A medium-level relationship was found between the levels of forced commitment, moral commitment, and self-interested commitment, which are the organizational commitment sub-dimensions of physical education teachers, and psychological comfort levels ($r = -0.39$, $r = 0.51$, $r = 0.43$). As the psychological comfort levels of physical education teachers increased, so did their level of organizational commitment. After all; A significant positive relationship was found between the organizational commitment levels of physical education teachers and their psychological comfort levels.

Keywords: Organizational Commitment, Physical Education Teacher, Psychological Comfort.



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INTRODUCTION

The concept of psychological comfort is a concept that is frequently used recently. This concept is a form of expression first introduced by Edmondson (1999) (Koçak & Yener, 2019). The concept of psychological comfort can be explained as a person's well-being or feeling of psychologically safe (Yener, 2015). The level of psychological comfort is explained as the level of perceived interpersonal anxiety or psychological risk that people feel within the organization where they work (Edmondson & Lei, 2014). The perception of psychological comfort is a collection of perceptions formed by the combination of reactions shown by managers in the institutions where people are located, in expressing their suggestions and thoughts, taking responsibility, receiving help or support from other employees, and making mistakes (Edmondson, 1999). When people express their opinions, express situations they are unhappy with, ask questions and express the mistakes they see, the reactions shown by their friends or managers affect psychological comfort positively or negatively (Yener, 2015). Psychological comfort is the reflection of inner peace in the environments where people work the way they work (Edmondson, 2002). Therefore, rather than being an individual concept in reality, it is accepted as a common perception that all individuals in the working environment feel and share (Kahn, 1990). The confidence that people have in return for the responsibilities and risks they assume in the places where they work and the belief that they will not be punished or humiliated as a result of the mistakes and failures they have made are directly related to the psychological comfort level (Lee et al., 2004). It has been determined that people with high psychological comfort levels express themselves more comfortably in the places where they work, have high levels of job satisfaction, experience very little stress, and feel much more valuable (Liu et al., 2014; Yener, 2018). People working in institutions with a high level of psychological comfort can act comfortably in voicing and solving the identified problems, criticizing themselves and other friends easily, and easily expressing their suggestions and solutions (Kessel et al., 2012). In the institutions where they work, people have the belief that if they are in a psychologically comfortable environment, they will be accepted and respected not only by their managers or managers, but also by other colleagues, and this situation allows people to work away from stress, have high risk-taking levels, and seek solutions at the maximum level (Newman et al., 2017). Employees who are not afraid of making mistakes and who trust themselves are defined as people with a high level of psychological comfort (Tiwari & Lenka, 2016). In institutions where people work together, the most important factor that will ensure a high psychological comfort level sense of trust. The sense of trust that people feel toward those they work with increases the level of psychological comfort in the work environment (Guchait et al., 2014). Research shows that the concept of trust and the concept of psychological comfort are very much related to each other (Baer & Frese, 2003). Three main factors that affect the level of psychological comfort can be mentioned. These are stated as the characteristics of co-workers, the relationships established with the people with whom they work, and the relations established with the manager or administrators. The fact that one of these factors is problematic affects the level of psychological comfort. For this reason, it is desirable to carry out all of the mentioned factors in a healthy way (May et al., 2004). It can be said that it improves self-efficacy with the Transtheoretical Model (Pennington, 2021).

The way people behave toward a community or a particular person that prepares them for restricted thoughts is called commitment. Commitment is a form of behavior that exists in places where we live collectively and is instinctively reflected (Doğan & Demiral, 2009). Organizational commitment is seen as an important phenomenon that has been studied for many years. The concept of organizational commitment was first introduced by Whyte in 1956 and has been later defined by many (Bakan, 2011). Some of these definitions are; O'Reilly et

al. (1991) defined organizational commitment as the psychological commitment that realizes the assimilation and internalization of the characteristics and goals of the places to which people are affiliated or work. Becker et al. (1996) defined the labor and effort of people as the emergence of their labor and effort within the scope of the objectives of the places where they work and the willingness to participate voluntarily in the social activities of the places where they work. Organizational commitment directly affects the happiness and willingness of people working within the organization. For this reason, increasing organizational commitment is an extremely important situation for employers (Şenturan, 2014). In the research conducted, it has been revealed that people with high organizational commitments work more efficiently, behave honestly and selflessly, are happy with their work, and do not think about leaving (Bayram, 2005). However, it has been determined that the production and performance levels of people with high levels of organizational commitment increase in the institutions where they work (Karim & Rehman, 2012). One of the points to be considered is the confusion about the concepts of job dependence and organizational dependence. These two concepts have different meanings from each other. Organizational dependence is the loyalty of people to the institution or place where they work, and dependence on work is the type of commitment to the profession that people have made. People may not show the same degree of dependence on their jobs or places of work (Dollard et al., 2012). Factors affecting organizational commitment are examined under three headings. These are organizational factors, individual factors, and non-organizational factors. The organizational factors examined as the first of these factors include the values of the organization, attitudes, and behaviors towards employees, the objectives of the institution, their contributions to the communication established between employees, and their perspectives towards employees. Fulfilling the responsibilities of institutions to their employees, helping them to improve themselves, and giving them an adequate wage have an important place in increasing organizational commitment (Gündoğan, 2009). When individual factors affecting organizational commitment are examined, age, professional experience, education, and gender, (Sıgri, 2007). Thirdly, in the examination of the mentioned external factors, situations that develop outside of employees or institutions are addressed. These can be stated as problems such as the economic structure of the country and related unemployment, problems arising from the sector or higher authorities (Ince & Gül, 2005).

In line with the information provided, the aim of the study was determined as the examination of the relationship between the psychological comfort and organizational commitment levels of physical education teachers.

METHOD AND MATERIALS

Research Model

In this study, a quantitative research screening model was used to examine the relationship between psychological comfort and organizational commitment levels of physical education teachers working in Elazığ province (Yazıcıoğlu & Erdoğan, 2004).

Universe Sample

The universe of the research consisted of physical education teachers working in Elazığ province. The study's sample group consisted of a total of 211 people, 148 male, and 63 female, from physical education teachers working in Elazığ in the 2022-2023 academic year. Descriptive statistics about the teachers participating in the study are given in Table 1.

Table 1. Descriptive Statistics Table of Physical Education Teachers.

Variables	Group	n	%
Gender	Male	148	70,1
	Female	63	29,9
Age	21-30 old	29	13,7
	31-40 old	105	49,8
	41-50 old	77	36,5
Occupational year	1-10 year/s	44	20,9
	11-20 years	124	58,8
	21-30 years	43	20,4
Educational status	Undergraduate	176	83,4
	Graduate	35	16,6
Marital status	Married	161	76,3
	Single	50	23,7

The number and percentage frequencies of the physical education teachers participating in the study according to gender, age, occupational year, educational status, and marital status variables are given in the table.

Data Collection Tools

Psychological Comfort Scale

Edmondson (1999) developed the psychological comfort scale to determine the level of comfort and security in the institution where people work. Turkish adaptation was made by Yener in 2015. The scale consists of two sub-dimension scales "Initiative" and "Tolerance" and the evaluation is made on the based total score. The psychological comfort scale is a 5-point Likert-type scale. The scale scoring can obtain a maximum of 35 and a minimum of 7 points. The high score indicates that the institution's psychological comfort level is high. The reliability value of the developer scale was found to be Cronbach Alpha 0.82. The reliability coefficient of the psychological comfort scale was found to be Cronbach Alpha 0.81.

Organizational Commitment Scale

The scale was developed by Panley and Gould (1988) to measure people's loyalty to the institutions they work for. The Turkish version was made by Ergün and Celik in 2019. The scale is examined in three sub-dimensions as "Moral Commitment", "Self-interested Commitment, and "Forced Commitment". Questions 1, 4, 7, 10, and 13 measure the self-interested commitment dimension, questions 3, 6, 9, 12, and 15 measure the moral commitment dimension, and questions 2, 5, 8, 11, and 14 measure the forced commitment dimension. The scale is 5 points Likert type scale. Questions are evaluated between 1 point and 5 points. As a result of the scale, a minimum of 15 points and a maximum of 75 points can be obtained. In the evaluation of the sub-dimensions, the lowest 5 and the highest 25 points can be obtained. In the evaluation of the scores received, the high level of the points obtained in the forced commitment sub-dimension indicates a low level of commitment, and the high score obtained in the moral commitment and self-interested commitment sub-dimensions indicates a high level of commitment. Cronbach Alpha internal consistency coefficient was found to be 0.94 for the moral commitment sub-dimension, 0.93 for the self-interested commitment sub-dimension, and 0.92 reliability coefficient for the forced commitment sub-dimension.

Analysis of Data

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, and -1 is accepted as the value range (Tabachnick & Fidell, 2013). Independent-Sample T-test was applied in terms of gender, education status, and marital status variables of the obtained data, One Way ANOVA tests were applied in terms of age and occupational year variables. Pearson Correlation Analysis was applied to examine the relationship between organizational commitment and psychological comfort levels. The significance level was determined as $p < 0.05$ in the study.

FINDINGS

In this section, statistical evaluation of the data was made and the results of the evaluation were shown in tables. The result of the statistical test to see whether the data was distributed normally in the research was given in the Table 2.

Table 2. Data Normality Analysis Table

Measured values	n	X	Standart D.	Skewness	Kurtosis
Forced commitment	211	3,04	0,34	0,00	-0,35
Self-interested commitment	211	3,84	0,03	0,04	-0,60
Moral commitment	211	3,35	0,03	0,12	-0,48
Psychological comfort	211	2,69	0,02	0,32	-0,34

Skewness and Kurtosis values were examined for normality analysis of the data. Skewness and Kurtosis values are considered to be -1 and +1 ranges. It was determined that the obtained data showed normal distribution when the table was examined.

Table 3. Comparison of Organizational Commitment and Psychological Comfort Levels According to Gender Variable.

Measured values	Variable	n	X	Sd	t	p
Forced commitment	Male	148	3,04	0,48	0,34	0,72
	Female	63	3,02	0,53		
Moral commitment	Male	148	3,33	0,51	-0,62	0,53
	Female	63	3,38	0,43		
Self-interested commitment	Male	148	3,82	0,45	-0,88	0,37
	Female	63	3,88	0,42		
Psychological comfort	Male	148	2,67	0,37	-1,18	0,23
	Female	63	2,74	0,38		

When Table 3 is examined, the comparison of organizational commitment and psychological commitment values in terms of gender variable was made with the Dependent-Sample T-test. When the data were examined, no significant differences were detected in terms of gender variables in the values of forced commitment, moral commitment, and self-interested commitment, which are the sub-dimensions of organizational commitment ($p=0,72$, $p=0,53$, $p=0,37$). There was no significant difference in terms of gender variable when the psychological comfort value was examined ($p=0,23$).

Table 4. Comparison of Organizational Commitment and Psychological Comfort Levels in terms of Age Variable.

Measured values	Variable	n	X	Sd	F	p
Forced commitment	21-30 old	29	2,38	0,33	54,43	0,00*
	31-40 old	105	3,02	0,43		
	41-50 old	77	3,31	0,40		
Moral commitment	21-30 old	29	3,97	0,33	67,18	0,00*
	31-40 old	105	3,41	0,39		
	41-50 old	77	3,02	0,39		
Self-interested commitment	21-30 old	29	4,35	0,30	55,56	0,00*
	31-40 old	105	3,91	0,36		
	41-50 old	77	3,55	0,37		
Psychological comfort	21-30 old	29	3,21	0,29	110,85	0,00*
	31-40 old	105	2,77	0,27		
	41-50 old	77	2,39	0,24		

*p<.05

In Table 4, the analysis of organizational commitment and psychological comfort values in terms of age variable was performed with the One Way Anova test. When the table was examined, a significant difference was found between age groups in organizational commitment sub-dimensions and psychological comfort value according to p<0.05 significance level. Tukey test was performed to determine the differences between the groups and was tabulated (Table 5).

Table 5. Determination of Differences Between Groups in terms of Age Variable.

Measured values	(I) Age	(J) Age	Mean Difference (I-J)	Sd	p
Forced commitment	21-30	31-40	-0,63	0,08	0,00*
		41-50	-0,92	0,08	0,00*
	31-40	21-30	0,63	0,08	0,00*
		41-50	-0,29	0,06	0,00*
	41-50	21-30	0,92	0,08	0,00*
		31-40	0,29	0,06	0,00*
Moral Commitment	21-30	31-40	0,56	0,08	0,00*
		41-50	0,95	0,08	0,00*
	31-40	21-30	-0,56	0,08	0,00*
		41-50	0,39	0,05	0,00*
	41-50	21-30	-0,95	0,08	0,00*
		31-40	-0,39	0,05	0,00*
Self-interested Commitment	21-30	31-40	0,44	0,07	0,00*
		41-50	0,80	0,07	0,00*
	31-40	21-30	-0,44	0,07	0,00*
		41-50	0,36	0,05	0,00*
	41-50	21-30	-0,80	0,07	0,00*
		31-40	-0,36	0,05	0,00*
Psychological comfort	21-30	31-40	0,44	0,05	0,00*
		41-50	0,82	0,05	0,00*
	31-40	21-30	-0,44	0,05	0,00*
		41-50	0,37	0,03	0,00*
	41-50	21-30	-0,82	0,05	0,00*
		31-40	-0,37	0,03	0,00*

*p<.05

Tukey test was applied to determine the differences between the groups in terms of age variable. When the table is examined, it is seen that in the forced commitment sub-dimension, the 21-30 age group has a significantly lower level of commitment compared to the 31-40 age group and 41-50 age group, and the 31-40 age group has a significantly lower level of commitment than the 41-50 age group. It was observed that he had a low level of forced commitment ($p < 0.05$). In the sub-dimensions of moral commitment and self-interested commitment, the 41-50 age group has a significantly lower level of commitment compared to the 31-40 and 21-30 age groups, and the 31-40 age group has a significantly lower commitment level than the 21-30 age group. observed ($p < 0.05$). When the differences between the groups in the measurement of psychological comfort were examined, it was determined that the 21-30 age group had a significantly higher comfort level than the 31-40 age group and the 41-50 age group. It was determined that the 31-40 age group had a significantly higher psychological comfort level than the 41-50 age group ($p < 0.05$). It was determined that organizational commitment and psychological comfort decreased significantly as the age level increased when the findings were examined.

Table 6. Comparison of Organizational Commitment and Psychological Comfort Levels in terms of the Occupational Year Variable

Measured values	Variable	n	X	Sd	F	p
Forced commitment	1-10 years	44	2,62	0,50	26,50	0,00*
	11-20 years	124	3,09	0,44		
	21-30 years	43	3,29	0,42		
Moral Commitment	1-10 years	44	3,80	0,41	33,80	0,00*
	11-20 years	124	3,28	0,43		
	21-30 years	43	3,09	0,43		
Self-interested Commitment	1-10 years	44	4,19	0,39	28,12	0,00*
	11-20 years	124	3,82	0,41		
	21-30 years	43	3,55	0,37		
Psychological comfort	1-10 years	44	3,04	0,37	46,77	0,00*
	11-20 years	124	2,67	0,31		
	21-30 years	43	2,38	0,22		

* $p < .05$

The analysis of organizational commitment and psychological comfort values in terms of occupational year variable was performed with the One Way Anova test. When the table 6 was examined, a significant difference was found between age groups in organizational commitment sub-dimensions and psychological comfort value according to $p < 0.05$ significance level. Tukey test was performed to determine the differences between the groups and was tabulated (Table 7).

Table 7. Determination of Differences Between Groups in terms of Occupational Year Variable.

Measured values	Occupational year (I)	Occupational year (J)	Mean Difference (I-J)	Sd	p
Forced commitment	1-10	11-20	-0,47	0,07	0,00*
		21-30	-0,67	0,09	0,00*
	11-20	1-10	0,47	0,07	0,00*
		21-30	-0,1	0,07	0,03*
	21-30	1-10	0,67	0,09	0,00*
		11-20	0,19	0,07	0,03*

Moral commitment	1-10	11-20	0,52	0,07	0,00*
		21-30	0,71	0,09	0,00*
	11-20	1-10	-0,52	0,07	0,00*
		21-30	0,18	0,07	0,03*
	21-30	1-10	-0,71	0,09	0,00*
		11-20	-0,18	0,07	0,03*
Self-interested commitment	1-10	11-20	0,36	0,07	0,00*
		21-30	0,63	0,08	0,00*
	11-20	1-10	-0,36	0,07	0,00*
		21-30	0,26	0,07	0,00*
	21-30	1-10	-0,63	0,08	0,00*
		11-20	-0,26	0,07	0,00*
Psychological comfort	1-10	11-20	0,36	0,05	0,00*
		21-30	0,65	0,06	0,00*
	11-20	1-10	-0,36	0,05	0,00*
		21-30	0,28	0,05	0,00*
	21-30	1-10	-0,65	0,06	0,00*
		11-20	-0,28	0,05	0,00*

*p<.05

Tukey test was applied to determine the differences between the groups in terms of the occupational year variable. When the table is examined, it is seen that in the forced commitment sub-dimension, the 1-10 year group has a significantly lower level of commitment than the 11-20 year and 21-30 year group, and the 11-20 year group has a significantly lower level of commitment than the 21-30 year group. It was observed that he had a low level of forced commitment ($p < 0.05$). In the sub-dimensions of moral commitment and self-interested commitment, the 21-30 year group has a significantly lower level of commitment compared to the 11-20 year and 1-10 year groups, while the 11-20 year group has a significantly lower level of commitment compared to the 1-10 year group. ($p < 0.05$). When the differences between the groups in the measurement of psychological comfort were examined, it was determined that the 1-10 year group had a significantly higher comfort level than the 11-20 year group and the 21-30 year group. It was determined that the 11-20 year group had a significantly higher psychological comfort level than the 21-30 year group ($p < 0.05$). It was determined that organizational commitment and psychological comfort decreased significantly as the level of the occupational year increased when the findings were examined.

Table 8. Comparison of Organizational Commitment and Psychological Comfort Levels According to the Educational Status Variable.

Measured values	Variable	n	X	Sd	t	p
Forced commitment	Undergraduate	176	3,02	0,49	-0,80	0,42
	Graduate	35	3,10	0,52		
Moral commitment	Undergraduate	176	3,36	0,50	0,56	0,57
	Graduate	35	3,30	0,45		
Self-interested commitment	Undergraduate	176	3,84	0,45	0,21	0,82
	Graduate	35	3,82	0,41		
Psychological comfort	Undergraduate	176	2,69	0,38	0,00	0,99
	Graduate	35	2,69	0,37		

The comparison of organizational commitment and psychological commitment values in terms of the educational status variable was made with the Dependent-Sample T-test. When the data were examined, no significant difference was found in terms of educational status

variables in the values of forced commitment, moral commitment, and self-interested commitment, which are the sub-dimensions of organizational commitment ($p=0,42$, $p=0,57$, $p=0,82$). When the psychological comfort value was examined, no significant difference was found in terms of the educational status variable ($p=0,99$).

Table 9. Comparison of Organizational Commitment and Psychological Comfort Levels According to the Marital Status Variable.

Measured values	Variable	n	X	Sd	t	p
Forced commitment	Married	161	3,07	0,44	1,95	0,05*
	Single	50	2,92	0,63		
Moral commitment	Married	161	3,29	0,46	-3,22	0,00*
	Single	50	3,54	0,53		
Self-interested commitment	Married	161	3,77	0,41	-4,04	0,00*
	Single	50	4,06	0,48		
Psychological comfort	Married	161	2,63	0,35	-4,53	0,00*
	Single	50	2,89	0,39		

* $p<.05$

The comparison of organizational commitment and psychological commitment values in terms of the marital status variable was made with the Dependent-Sample T-test. In the forced commitment sub-dimension, it was determined that married teachers had a significantly higher commitment level than single teachers ($p=0.05$). In the sub-dimensions of moral commitment and self-interested commitment, single teachers were found to have a significantly higher level of commitment than married teachers ($p=0.00$). In the measure of psychological comfort, it was determined that the psychological comfort level of married teachers was significantly lower than that of single teachers ($p=0.00$). When the psychological comfort value was examined, a significant difference was found in terms of the marital status variable ($p=0.00$). It was determined that the organizational commitment sub-dimensions and psychological comfort values of single teachers were higher than married teachers when the findings were examined.

Table 10. Examination of the Relationship Between Organizational Commitment Sub-Dimensions and Psychological Comfort

Correlation	Psychological comfort	
Forced commitment	Pearson r	-0,39**
	p	0,00
	n	211
Moral commitment	Pearson r	0,51**
	p	0,00
	n	211
Self-interested commitment	Pearson r	0,43**
	p	0,00
	n	211

Pearson Correlation analysis was performed to examine the relationship between organizational commitment levels and psychological comfort levels of physical education teachers. When the data were examined, a medium-level relationship was found between the psychological comfort levels of the teachers and the organizational commitment sub-dimensions. A negative relationship was determined between psychological comfort and forced commitment level ($r=-0.39$). As the forced dependencies of physical education teachers

decreased, their level of psychological comfort increased. A positive relationship was determined between psychological comfort and the sub-dimensions of moral commitment and self-interested commitment ($r=0.51$, $r=0.43$). As physical education teachers' levels of moral commitment and self-interested commitment increased, so did their psychological comfort levels.

DISCUSSION AND CONCLUSION

In the research conducted to examine the relationship between the organizational commitment levels and psychological comfort levels of physical education teachers, the organizational commitment levels of physical education teachers were examined in terms of sub-dimensions and psychological comfort levels, gender, age, occupational year, educational status, and marital status variables. The relationship between teachers' organizational commitment levels and psychological comfort levels was also statistically examined and discussed within the framework of the literature.

In the examination of physical education teachers' organizational commitment and psychological comfort levels in terms of gender variable, no statistically significant difference was found between male teachers and female teachers in the values of forced commitment, moral commitment, self-interested commitment values and psychological comfort levels from the organizational commitment sub-dimensions. Some studies are parallel to the research, as well as studies with conflicting results with the results of the research in the literature review on the subject. Demirtaş (2010) has not found a significant difference between the organizational commitment levels of male teachers and female teachers in his research examining the organizational commitment of private teaching institution teachers. In the research conducted by Yakut (2015) on the organizational commitment levels of vocational high school teachers, it was found that male teachers had a higher level of organizational commitment than female teachers. Yalçın & İplik (2005) have not found a significant difference between the organizational commitment levels of male and female employees in their research on hotel employees. Studies in which women have a higher level of organizational commitment than men are also found in the literature (Durna & Eren, 2005; Albayrak, 2007).

It was found that the organizational commitment levels and psychological comfort levels of physical education teachers decreased significantly as their age and occupational years increased in examining the organizational commitment levels and psychological comfort levels of physical education teachers according to age and occupational year variables. Topaloğlu, Koç & Yavuz (2008) found that teachers who are new to the occupation have more organizational commitment than senior teachers in their studies examining the organizational dependencies of teachers in the literature review on the subject. Özcan (2008) found that the occupational seniority year did not make a significant difference in organizational dependency levels in his research. In his research on vocational high school teachers, Yakut (2015) found that as the age of teachers increased, their organizational commitment increased. The research contradicts the findings obtained. Yener (2016) determined that psychological comfort level increase as age and occupational year increase in the examination of psychological comfort levels according to the age and occupational year variable and predicted that this result may be because people turn into a more contented structure due to the increase in experience with age. It is seen that there are studies that are parallel and contradictory with the research in the literature review. It is thought that the decrease in organizational commitment and psychological comfort as the age and occupational year increase is due to the economic difficulties encountered by teachers and the occupational attrition experienced by physical education teachers when the findings obtained in the study are evaluated.

In examining organizational commitment levels and psychological comfort levels of physical education teachers regarding educational status variables, there was no significant difference between organizational commitment levels and psychological comfort levels between undergraduate and graduate teachers. Yener (2016) has not found a difference between education and psychological comfort levels. Güzelbayram (2013) has not found a significant difference in the examination of the organizational commitment of the instructors in terms of educational status variable in her research on lecturers. Other studies have been found that are parallel to the research (Memişoğlu & Kalay, 2017; Uğraşoğlu & Çağanağa, 2017).

In the study, in the examination of the organizational commitment levels and psychological comfort levels of physical education teachers according to the marital status variable, it was found that single teachers had higher organizational commitment levels and psychological comfort levels than married teachers. In the literature, it has been found that married teachers have more organizational commitment than single teachers (Al-Fadli, 1997; Coral, 2006; Özkaya et al., 2006; Sürgevil, 2007). Nartgün and Menep (2010) found that marital status did not affect organizational commitment in their research. The findings obtained by the literature review do not show parallels. It is thought that the reason for this is due to the economic problems and livelihood problems experienced today.

A medium-level relationship was found between the sub-dimensions of organizational commitment and the level of psychological comfort in the study. As the organizational commitment levels of physical education teachers increased, their psychological comfort levels also increased. A sufficient number of studies have not been found in the literature review on the subject. Bilgin (2018) has not found a significant relationship between psychological well-being and organizational commitment levels in his research on teachers working in private schools. When the findings are evaluated, it is predicted that the relationship between the level of organizational commitment and psychological comfort levels is more connected to the institutions where physical education teachers work in situations where they are psychologically comfortable.

After all; There was no significant difference in the organizational commitment levels and psychological comfort levels of physical education teachers in terms of gender and educational status variables. Significant differences were found in age, occupational year, and marital status variables. It was found that teachers with young ages and fewer occupational years had higher levels of organizational commitment and psychological comfort. It was found that single teachers had higher levels of organizational commitment and psychological comfort levels than married teachers. A medium-level relationship was found between the sub-dimensions of organizational commitment and the level of psychological comfort. As the organizational commitment levels of physical education teachers increased, their psychological comfort levels also increased.

Suggestions;

- Application of research to teachers of other branches,
- Examining the relationship between the economic difficulties experienced by teachers and the findings of the research,
- The application of the research to teachers living in metropolitan and the comparison of the findings are suggestions that can be made as a result of the study.

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