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The Relationships Between Emotional Reactivity and Psychological Adaptation Skills: A Study on Elite Level Athletes

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ABSTRACT

In this study, it is aimed to examine the relationship between emotional reactivity, depression, anxiety and stress in elite athletes, considering that psychological qualities such as emotional reactivity and anxiety observed in athletes due to the heavy preparation conditions inherent in sports and the recent breaks in sports may increase the risk of psycho-social disorders. In this descriptive study, the relational survey model was used. The study group of the research consisted of a total of 209 elite level athletes, 59 women and 150 men, in different branches. As a data collection tool; "Emotional Responsiveness Scale" and "Turkish Short Form of Depression Anxiety Stress Scale (Dass 21)" were used. As a result of the study, there were significant differences between the emotional reactivity and depression, anxiety, and stress levels of the athletes involved in team sports compared to the athletes involved in individual sports, according to the sports branch. However, it has been determined that there is a positive and highly significant relationship between the emotional reactivity of the athletes and their depression, anxiety, and stress levels. As a result, considering the strong relationship between emotional reactivity and psychological adjustment skills, it is important to take protective measures in both social and professional lives of athletes for this concept, as an increase in the level of emotional reactivity may have positive relations with some psychological adjustment skills.

Keywords: Anxiety, Depression, Elite Athlete, Emotional Reactivity, Stress



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INTRODUCTION

Considering the studies on emotion, which has an important place in psychology, it is seen that important scientific researchers have been done to understand the structure of emotion (Ekman & Davidson, 1994). But despite these studies, there are countless unanswered questions in the study of emotions. Because individuals show different behavior patterns in various contexts, there is subjectivity and diversity in their emotional experiences (Schachter & Singer, 2000). When we look at the basic components of many psychiatric problems, exaggerated emotional reactivity and disturbances in emotion regulation are seen (Campbell-Sills & Barlow, 2007). Emotion regulation is a versatile and multidimensional process (Rosen & Epstein, 2010). When we look at the literature, there are many studies examining the relationships between various aspects of emotion, emotion regulation strategies and psychopathology. Few studies that examine individuals' susceptibility to problems related to emotion regulation focus on emotional reactivity. Several different theoretical models have emphasized the importance of both emotional regulation and emotional reactivity in the development and maintenance of psychopathology, but less attention has been paid to emotional reactivity and few studies have been conducted (Nock et al., 2008). There is considerable debate about the definition of emotion regulation, and with it the distinction between emotional reactivity and emotion regulation. However, when we look at most emotion regulation models, reactivity is seen as an emotional experience arising from the interaction with an emotion-inducing stimulus and the physiological, cognitive and behavioral mechanisms used to change the initial emotional reaction in line with environmental needs (Campos et al., 2004).

Emotional reactivity and the acquisition of psychological adaptation skills assume pivotal roles in the performance and well-being of athletes. This exposition provides a comprehensive overview of these constructs and their profound importance.

Emotional reactivity pertains to an individual's capacity to respond to emotional stimuli or triggers. In the realm of athletes, it encompasses their perception, processing, and expression of emotions in reaction to diverse situations, both within and outside the athletic domain. The degree of emotional reactivity can either augment or impede an athlete's performance, contingent upon their management of emotions. For instance, a moderate level of anxiety or excitement can propel performance, whereas excessive stress or anger can impair it. Athletes necessitate the cultivation of efficacious strategies to regulate their emotional reactivity, particularly in high-pressure circumstances. Techniques such as mindfulness, deep breathing, and visualization can enable emotional control and sustained focus.

Emotion reactivity is an important construct in the study of psychopathology; However, no measures to date have provided a comprehensive assessment of the subjective experience of emotional reactivity. Emotion reactivity refers to the degree to which an individual experiences emotion over a long period of time in response to a wide variety of stimuli, before returning to a strong or intense level of arousal (Nock et al., 2008). Individuals differ according to their emotional reactivity and emotion regulation capacities (Hessler & Katz, 2007). Individuals' reactivity and emotion regulation levels also vary from situation to situation and globally (Cole et al., 2004). Since effective regulation regulates negative emotional reactivity, the person does not experience destructive emotional stress, but the disorder that occurs in regulating negative emotional reactivity causes constantly increasing and damaging emotional stress (Rosen & Epstein, 2010).

Today, as a research area, depression, anxiety and stress have been the most studied and studied with different aspects together with other fields. When the studies are examined, it is stated that many people experience emotional problems due to various reasons (Akpınar,

2013; Durna, 2006). Depression can be defined as a situation in which the enjoyment and motivation of living decreases or is completely lost, a deep sadness and grief, feelings of anger, regret and guilt about past experiences, a pessimistic perception of the future, and a desire to die and commit suicide. In other words, depression; difficulty in thinking and concentrating, difficulty in memory, constant sadness and grief, feeling emptiness with anxiety, increase in nervous reactions, tendency to blame other individuals, change in appetite, questioning one's own worth with a sense of worthlessness, decreased interest in recreational activities and Decreased enjoyment of enjoyable activities, increased thoughts about death, increased smoking, coronary heart problems, difficulty in motivation (APA, 2000).

Anxiety and depressive disorders are ubiquitous and debilitating psychiatric conditions that collectively affect close to 10% of the global population every year (World Health Organization, 2017). Symptoms of anxiety and depression commonly co-occur, and high rates of comorbidity among anxiety and depressive disorders are well-established (Maser, & Cloninger, 1990). More than half of all individuals with major depressive disorder (MDD) develop an anxiety disorder during their lifetime (Kessler et al., 1996; Regier et al., 1998). Stress, on the other hand, can be defined as a state of constantly perceived mental tension. Stress occurs when the individual perceives the demands expected from him/her as excessive or feels that the capacity to adapt is insufficient (Cohen et al., 1995). It is known that the share of stress in the formation of diseases is large. While Lazarus (1966) states that stress arises when the individual feels threatened and cannot be successful enough, Raymond (2000) states that people feel anxiety about coping with situations. Selye (1936), on the other hand, defined the definition of stress as a physical, mental and emotional reaction to an unfamiliar situation during the adaptation process. According to the coping theories of Lazarus and Folkman (1984) regarding stress, it was stated that individuals constantly evaluate the stimuli around them, and emotions occur after this process. The common features of the definitions are that it is an individual-specific experience due to pressure, expectation or threat, and that the person's perception of competence is negatively affected. In this context, the common features of the definition of stress are as follows (APA, 2000); feelings of guilt, irritability, grief, anger, sleep disturbance, change in appetite and weight, difficulty concentrating when making decisions, negative thoughts, difficulty in attention, not feeling peaceful, having problems with other individuals, and difficulties in communication.

The potential for individuals to exhibit emotional responses to various events, circumstances, and individuals encountered throughout their lifetimes is subject to change. Should individuals experience elevated positive emotional reactions, their levels of affection, admiration, and personal self-assurance will correspondingly increase. Conversely, heightened negative emotional reactions can result in the emergence of aggressive tendencies, fear, anxiety, and even suicidal ideation (Wentzel, 1998). Understanding the capacity of emotional reactivity to forecast psychological maladjustment and the propensity for trait anger will contribute substantially to the psychological well-being and athletic performance of athletes. Emotions play a pivotal role in the realm of sports, constituting a vital component that largely determines the level of stimulation experienced during competition. Given the inherently competitive nature of sports, athletes are compelled to exert maximal effort while confronting the mental strain and significant physical exhaustion that invariably accompany such endeavors. This process primarily involves a sequence of purposeful and coordinated activities that hinge upon cognitive functioning (Bali, 2015; Kolayis & Sari, 2011). In summary, emotional reactivity and psychological adaptation skills are essential components of an athlete's mental toolkit. Developing these skills can lead to improved performance, greater resilience in the face of challenges, and overall well-being, both on and off the field.

In this study, it was aimed to examine the relationship between emotional reactivity and psychological adjustment skills of elite athletes according to various demographic

variables. In this context, answers to the following questions were sought;

1. Do the emotional reactivity and psychological adaptation skills of elite athletes differ according to the "gender" variable?
2. Do the emotional reactivity and psychological adaptation skills of elite level athletes differ according to the "sport branch" variable?
3. Do the emotional reactivity and psychological adaptation skills of elite athletes differ according to the "age" variable?
4. Do the emotional reactivity and psychological adaptation skills of elite athletes differ according to the "sport age" variable?
5. What is the relationship between emotional reactivity and depression, anxiety and stress?

METHOD

Research Design

In this study, the method of "correlational research from quantitative research methods" was used. Correlational research refers to studies that examine the relationship between two or more variables without interfering with these variables (Fraenkel & Wallen, 2006).

Population and Sample of the Study

The population of the study consists of elite level athletes who actively play sports in their clubs in Turkey (taekwondo, athletics, boxing, wrestling, curling, ice hockey, volleyball) and participate in at least one international competition. The sample group consists of 209 athletes who were randomly selected from the universe and agreed to participate in the research.

Table 1. Information on Demographic Characteristics

Gender	N	%
Female	59	28,2
Male	150	71,8
Sports Branches	N	%
Individual Sports	143	68,4
Team Sports	66	31,6
Age	N	%
18 years and under	48	23,0
19-23 years	84	40,2
24-28 years	45	21,5
29 years and over	32	15,3
Sport Ages	N	%
4 years and under	17	8,1
5-8 years	58	27,8
9-12 years	52	24,9
13 years and over	82	39,2
Total	209	100

Regarding the demographic information of the athletes participating in the study: 59 female and 150 male; 143 people take part in individual sports and 66 in team sports; 48 people are under the age of 18, 84 people are between the ages of 19-23, 45 people are between the ages of 24-28, and 32 people are over the age of 29; 17 people are 4 and less than 4 years old, 58 people are 5-8 years, 52 people are 9-12 years, 82 people are 13 years and above.

Data Collection Tools

In the study, a questionnaire consisting of three parts was used to collect data from the participants.

Personal Information Form: The first part is the personal information form created by the researcher. In this section, there are questions to determine the socio-demographic characteristics of the participants such as gender, sports branch, age and sports age.

Emotional Reactivity Scale: In the second part of the questionnaire, the Emotional Reactivity Scale developed by Nock et al. (2008) and adapted into Turkish by Seer et al. (2013) was used to measure the emotional reactivity levels of the participants. The scale consists of 17 items in a 4-point Likert type (1 = strongly disagree, 4 = completely agree). The scale consists of 21 items, and three sub-dimensions: responsiveness, psychological resilience and emotional sensitivity. While the internal consistency coefficient was found to be 0.94 in the original study. The cronbach alpha values of this study were found to be .91.

DASS (Depression Stress and Anxiety) -21 Scale: In the third part of the questionnaire, the DASS (Depression Stress and Anxiety Scale) -21 scale, which was first developed by Lovibond and Lovibond in 1995 as 42 items and three sub-dimensions, and later revised to 21 items by Brown et al. in 1997, was used to determine the depression, anxiety and stress levels of the participants. The Turkish adaptation study was carried out by Yılmaz et al. (2017). Scale items are in 4-point Likert type; It is scored between 0 “not suitable for me” and 3 “completely suitable for me”. In the Turkish adaptation study of the scale, Cronbach's alpha values of the sub-dimensions were found between 0.75 and 0.81 (Yılmaz et al., 2017). The cronbach alpha values of this study were found to be .94.

Data Analysis

The data obtained from the participants in the study were transferred to digital media with SPSS 23.0 software. In the first stage, skewness and kurtosis values were checked in order to reveal whether the data collected after the frequency analysis showed normal distribution, and parametric tests were applied because the data showed normal distribution. It is said that the data within the limits explained by Tabachnik and Fidell (2015) (-1.5 to +1.5) show a normal distribution. T-test was used for demographic variables of gender and sports branch, and One Way Anova Test was used for demographic variables of age and sports age. Correlation analysis was conducted to reveal the relationship aimed in the research. In the study, the analyzes were carried out at a 95% confidence interval.

Table 2. Normality Test Results

Scale	N	Min.	Mak.	Mean	Sd.	Skewness	Kurtosis
Emotional Sensitivity	209	1.00	4.00	2.66	.739	.102	-.575
Responsiveness	209	1.00	4.00	2.52	.688	-.187	-.766
Resilience	209	1.00	4.00	2.16	.673	.193	-.460
Emotional Reactivity Total	209	1.00	4.00	2.41	.622	.057	-.582
Anxiety	209	1.00	4.00	1.95	.755	.539	-.336
Depression	209	1.00	4.00	1.99	.856	.548	-.811
Stress	209	1.00	4.00	2.17	.714	.087	-.748

As seen in Table 2, the test of normality was used to determine whether the data were normally distributed. It is said that the data within the limits explained by Tabachnik and Fidell (2015) (-1.5 to +1.5) show a normal distribution.

FINDINGS

The results of the analyses of the research findings are given in this section.

Table 3. Comparison of Emotional Reactivity and Psychological Adaptation Skills Related to Participants' Gender

Scale	Gender	N	\bar{x}	Sd.	t	p
Emotional Sensitivity	Female	59	2.84	.779	2.253	.025*
	Male	150	2.59	.712		
Responsiveness	Female	59	2.63	.700	1.336	.183
	Male	150	2.48	.682		
Resilience	Female	59	2.12	.551	-.517	.606
	Male	150	2.18	.716		
Emotional Reactivity Total	Female	59	2.48	.594	.983	.327
	Male	150	2.39	.632		
Anxiety	Female	59	1.82	.688	-1.515	.131
	Male	150	2.00	.776		
Depression	Female	59	2.02	.921	.361	.719
	Male	150	1.97	.832		
Stress	Female	59	2.15	.669	-.149	.882
	Male	150	2.17	.733		

As seen in Table 3, in the comparison of emotional reactivity and psychological adjustment skills according to the gender of the participants; There is a significant difference in the emotional sensitivity (p=.025) sub-dimension of the emotional reactivity scale. No significant difference was found between the other sub-dimensions and the total score of the emotional reactivity scale. According to this, In the sensitivity sub-dimension of the emotional reactivity scale, female participants ($\bar{x} =2.84\pm.779$) compared to male participants ($\bar{x} =2.59\pm.712$); appear to have higher sensitivity.

Table 4. Comparison of Emotional Reactivity and Psychological Adaptation Skills of Participants in Sports Branches

Scale	Sports Branches	N	\bar{x}	Sd.	t	p
Emotional Sensitivity	Individual Sports	143	2.56	.719	-2.930	.004*
	Team Sports	66	2.87	.740		
Responsiveness	Individual Sports	143	2.43	.655	-2.827	.005*
	Team Sports	66	2.72	.723		
Resilience	Individual Sports	143	2.09	.670	-2.132	.034*
	Team Sports	66	2.31	.662		
Emotional Reactivity Total	Individual Sports	143	2.33	.603	-2.903	.004*
	Team Sports	66	2.59	.629		
Anxiety	Individual Sports	143	1.88	.751	-1.996	.047*
	Team Sports	66	2.10	.745		
Depression	Individual Sports	143	1.95	.866	-1.029	.304
	Team Sports	66	2.08	.835		
Stress	Individual Sports	143	2.09	.724	-2.400	.017*
	Team Sports	66	2.34	.665		

As seen in Table 4, in the comparison of the emotional reactivity and psychological adjustment skills of the participants according to the sports branch; There is a significant difference in all sub-dimensions except depression ($p=.304$).

According to this, In all sub-dimensions of sensitivity, reactivity, endurance, emotional reactivity total, anxiety and depression, the participants who are interested in team sports compared to the participants who are interested in individual sports; appear to have higher averages.

Table 5. Comparison of Emotional Reactivity and Psychological Adaptation Skills Related to the Ages of the Participants

Scale	Age	N	\bar{x}	Sd.	F	p	Post hoc
Emotional Sensitivity	18 years and under ¹	48	2.40	.876	3.839	.011*	1<2,4
	19-23 years ²	84	2.73	.685			
	24-28 years ³	45	2.61	.690			
	29 years and over ⁴	32	2.93	.608			
Responsiveness	18 years and under ¹	48	2.30	.796	3.327	.021*	1<2,4
	19-23 years ²	84	2.65	.651			
	24-28 years ³	45	2.45	.599			
	29 years and over ⁴	32	2.63	.655			
Resilience	18 years and under ¹	48	2.03	.656	2.676	.048*	1,3<2
	19-23 years ²	84	2.28	.679			
	24-28 years ³	45	2.00	.612			
	29 years and over ⁴	32	2.27	.711			
Emotional Reactivity Total	18 years and under ¹	48	2.22	.693	3.678	.013*	1<2,4
	19-23 years ²	84	2.52	.602			
	24-28 years ³	45	2.31	.535			
	29 years and over ⁴	32	2.57	.596			
Anxiety	18 years and under ¹	48	1.90	.697	.702	.552	-
	19-23 years ²	84	2.03	.772			
	24-28 years ³	45	1.83	.670			
	29 years and over ⁴	32	1.96	.902			
Depression	18 years and under ¹	48	2.02	.855	2.402	.069	-
	19-23 years ²	84	2.14	.936			
	24-28 years ³	45	1.85	.667			
	29 years and over ⁴	32	1.72	.816			
Stress	18 years and under ¹	48	2.18	.735	3.097	.028*	3<2
	19-23 years ²	84	2.31	.695			
	24-28 years ³	45	1.92	.663			
	29 years and over ⁴	32	2.13	.731			

As seen in Table 5, in the comparison of emotional reactivity and psychological adjustment skills according to the age of the participants; There is a significant difference in all sub-dimensions except anxiety and depression sub-dimensions.

According to this; According to the total dimensions of sensitivity, responsiveness, emotional reactivity, the participants aged 19-23 and 29 and over compared to the participants under the age of 18; In the resilience sub-dimension, the participants aged 19-23 compared to the participants under the age of 18 and between the ages of 24-28; In the stress sub-dimension, it is seen that the participants in the 19-23 age range have higher averages than the participants in the 24-28 age range.

Table 6. Comparison of Emotional Reactivity and Psychological Adaptation Skills of Participants' Sports Ages

Scale	Sport Ages	N	\bar{x}	Sd.	F	p	Post hoc
Emotional Sensitivity	4 years and under ¹	17	2.31	.990	2.898	.036*	1,2<3
	5-8 years ²	58	2.52	.719			
	9-12 years ³	52	2.80	.757			
	13 years and over ⁴	82	2.63	.653			
Responsiveness	4 years and under	17	2.20	.871	2.573	.055	-
	5-8 years	58	2.42	.692			
	9-12 years	52	2.62	.645			
	13 years and over	82	2.61	.651			
Resilience	4 years and under	17	1.96	.649	1.278	.283	-
	5-8 years	58	2.13	.643			
	9-12 years	52	2.30	.665			
	13 years and over	82	2.14	.699			
Emotional Reactivity Total	4 years and under	17	2.13	.752	2.355	.073	-
	5-8 years	58	2.33	.612			
	9-12 years	52	2.54	.619			
	13 years and over	82	2.45	.586			
Anxiety	4 years and under	17	1.95	.762	.297	.828	-
	5-8 years	58	1.87	.692			
	9-12 years	52	2.01	.740			
	13 years and over	82	1.96	.812			
Depression	4 years and under	17	2.13	.956	2.138	.097	-
	5-8 years	58	2.08	.907			
	9-12 years	52	2.12	.847			
	13 years and over	82	1.80	.783			
Stress	4 years and under	17	2.09	.829	1.097	.352	-
	5-8 years	58	2.21	.671			
	9-12 years	52	2.29	.737			
	13 years and over	82	2.08	.703			

As seen in Table 6, in the comparison of the emotional reactivity and psychological adaptation skills of the participants according to their sports ages; only the sensitivity (p=.036) sub-dimension appears to differ. According to this, in the sensitivity sub-dimension, participants with 9-12 years of sports age have higher averages than participants who are under 4 years and 5-8 years of sports age.

Table 7. The Relationship Between Emotional Reactivity and Psychological Adaptation Skills of the Participants

		1	2	3	4
Emotional Reactivity Total	r	1	-	-	-
	p	-	-	-	-
	n	209			
Anxiety	r	.560**	1	-	-
	p	.000	-	-	-
	n	209	209		
Depression	r	.524**	.687**	1	-
	p	.000	.000	-	-
	n	209	209	209	
Stress	r	.676**	.728**	.718**	1
	p	.000	.000	.000	-
	n	209	209	209	209

As seen in Table 7, a positive and strong relationship was found between emotional reactivity and anxiety ($r=.560^{**}$), depression ($r=.524^{**}$) and stress ($r=.676^{**}$) levels of the research group.

DISCUSSION

In this study, it was aimed to examine the relationship between emotional reactivity and psychological adjustment skills of elite athletes according to various demographic variables. Considering the findings of our study, a positive and strong relationship was found between the emotional reactivity of the participants and their anxiety, depression and stress levels. Emotional reactivity is the individual's reactions to emotions that arise in his relationships with other individuals throughout his life (Yurdakul & Üner, 2015). Therefore, experiencing negative emotions leads to the development of negative emotional reactivity. In this context, these emotional reactions in the individual can lead to psychopathic problems. The individual may become depressed, and this will lead to a decrease in the individual's satisfaction (Cavanagh et al., 2003). Negative emotions are important triggers of emotional reactivity (Berry et al., 2005; Edmondson, 2004).

It is thought that when an individual encounters an undesirable situation in his daily life, his reactions to this situation are closely related to his psychological resilience levels. Individuals with high resilience in the face of events will also be more likely to cope with the negative consequences of these events (Zaferoğlu, 2018). Rosen et al. (2010) stated that positive emotion regulation skills prevent exaggerated and destructive emotions, and therefore prevent emotional reactivity. It is consistent with the hypothesis that high-intensity positivity may be associated with some forms of maladjustment, while low-intensity positivity is more likely to be associated with well-being (Kochanska et al., 2007). Individuals with high psychological resilience feel more positive emotions such as hope and love and less negative emotions such as anger and anxiety in their daily lives, and these individuals see themselves as happier individuals (Chevans et al., 2016; Sahranç et al., 2017; Zhang et al., 2015). At above-average levels of emotional reactivity, there is a very strong relationship between stress and depressive symptoms. This suggests that emotional reactivity to stress is an important moderator of the relationship between stress and depression; As emotional reactivity increases, the relationship between stress and depression becomes stronger (Charbonneau et al., 2009). Also the study conducted by Çakır (2023) explored the relationship between physical activity, emotional well-being, and the perceived impact of COVID-19 on quality of life among students. The findings indicated that students who engaged in physical activities reported experiencing lower levels of negative emotions. Furthermore, the adverse impact of the COVID-19 pandemic on the quality of life was perceived to be less severe among physically active individuals compared to their less active counterparts.

Wählstedt et al. (2019) stated that negative emotional reactivity leads to impulsive behaviors, decreased attention, focusing problems and destructive behaviors. Henry and Dargel (2019) stated that difficulty in emotion regulation and emotional reactivity are effective in the etiology of mood disorders such as depression, anxiety and bipolar disorders. Studies have shown that perceived social support and psychological resilience are low; In case of any problem, stress, depression, anxiety and aggression lead to the emergence of emotional reactions in the individual. Increasing perceived social support leads to an increase in psychological resilience, control of emotions and a decrease in emotional reactivity (Töremen & Çankaya, 2008; Çubukçu et al., 2010; Kılıç et al., 2007; Yurdakul & Üner, 2015). It is beneficial to give appropriate reactions to situations and to develop positive coping and problem-solving skills. In this case, the person does not experience emotional reactivity and there is no exaggeration in his behavior (Campos et al., 2004).

Conclusion

There is an important relationship between emotional reactivity and the maintenance of psychological adjustment. In order to understand how these two concepts affect each other, we need to consider some points. Emotional reactivity and psychological adjustment: Emotional reactivity is about how an individual expresses and responds to emotional experiences. Psychological adjustment varies with an individual's ability to cope with stress, maintain emotional balance and adapt to life. The relationship between the two is important in how emotional reactions can change their psychological adjustment and how psychological adjustment skills can regulate their emotional reactions.

Recommendation

Athletes can be given seminars on emotional reactivity and psychological adaptation skills. Studies can be conducted with other sample groups. A meta-analysis can be done by examining research on emotional reactivity and psychological adjustment skills. Different demographic variables can be included in the study.

Limitations

The limitations of this study require careful consideration of its findings. First, the study is limited by its reliance on convenience sampling methods as well as its ability to establish cause and effect relationships as a result of its correlational and cross-sectional design. Furthermore, the absence of a clinical group within the sample should also be recognized as a limitation. In addition, the qualities of elite athletes were only assessed through self-report, thus introducing another limitation. Consequently, in future research, using a mixed research approach that includes the perspectives of both elite athletes and coaches through triangulation may provide a more comprehensive view. Finally, it is important to note that the research only focused on elite athletes from the Turkish sample.

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