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International Journal of Sport Culture and Science
June 2025 : 13(2)
ISSN : 2148-1148
Doi : 10.14486/IntJSCS

TABLE OF CONTENTS

REFEREES OF THIS ISSUE

Dr. Akan Bayrakdar
Dr. Ali ÖZKAN
Dr. Emrah SEÇER
Dr. Emrah Seçer
Dr. Erdem Çakaloğlu
Dr. Fatih Hazar
Dr. Ferhat Çifçi
Dr. Ferman Konukman
Dr. Gökmen Kılınçarslan
Dr. Hakan Sunay
Dr. Hamza KÜÇÜK
Dr. Mehmet Özal
Dr. Samet Zengin
Dr. Sefa Haktan Hatık
Dr. Serdar Adıgüzel
Dr. Yılmaz Ünlü
Dr. Zeynep Yıldırım

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METAPHORICAL PERCEPTIONS OF CURLING ATHLETES TOWARDS THEIR FIELD OF SPORT

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Abstract

This research aims to determine the metaphorical perceptions of curling athletes regarding their sport. The study employs a qualitative research approach and a phenomenological design. The research group consists of 60 athletes, including 36 women and 24 men, competing in the 2023-2024 Season Turkey 2nd League promotion matches. Data collected through semi-structured interviews were analyzed using content analysis methods. In the data collection process, each athlete was given a personal information form and asked to complete the sentence: "Curling is like…….; because it……." The data analysis followed the stages of naming, elimination, category development, ensuring validity and reliability, calculating the frequencies of the obtained metaphors, and interpreting them. As a result, the obtained metaphors were dimensioned into four categories. These categories are "Development," "Relaxing Element," "Life," and "Social Environment," with the most frequently produced metaphors identified as life, future, and entertainment.

Keywords: Curling, Metaphor, Perception

Introduction

Sport is a universal activity that provides physical, spiritual, and personal development. Its unique rules include discipline. Thanks to that, sport contributes to the success of the individual in education and improve his/her health, social, and economic life (Memiş Kartal, 2020). The desire of individuals to have and maintain a healthy body, along with the efforts to achieve sports success on an international level, increases the interest in sports within society (Pekel et al., 2023). Moreover, sport is a universal phenomenon in attracting the masses and bringing society together (Sunay and Balcı, 2003). The Olympics are undoubtedly one of the most prominent organizations where sport unites the masses. Olympic sports are divided into summer games and winter games (Türkiye Milli Olimpiyat Komitesi, 2024). Winter sports are categorized into two main branches: those performed on snow and those performed on ice (Yıkılgan, 2016). Curling is one of the sports performed on ice. Curling is a team sport, played on ice, where two teams take it in turns to slide stones made of granite towards a target (World Curling Federation). In addition to imparting skills such as speed, endurance, and flexibility to players, the curling branch contributes to the development of fine motor skills through the importance of sensitivity when releasing the stone. Curling, known as ice chess, is also a strategy game. Therefore, this branch also contributes to the development of tactics, creativity, and mental endurance in athletes. This team sport has been played in our country since 2010. Curling, which first carried out its activities under the roof of the Turkish Ice Skating Federation, has continued its activities under the roof of the Turkish Curling Federation, which was established with its own name since 2015. Many tournaments, championships, courses and camps have been organised in order to introduce and popularise curling in our country. This situation has led to an increase in interest in the branch especially in cities such as Erzurum, Kars, Kocaeli, Ankara, Samsun and Trabzon where curling halls are located. The fact that there is a very wide age scale makes this sport branch more and more popular day by day. In this context, scientists also emphasize the importance of investigating perceptions towards curling.

Metaphors are words or phrases that help to express our thoughts about a phenomenon in the shortest way. Recently, metaphors have been frequently used to determine the sport concept (Yetim and Kalfa, 2019). Metaphors have been defined in various ways. A metaphor represents a set of cognitive concepts underlying the meaning conveyed by language, expressed through lexical and grammatical tools that any language can exhibit (Dobrić, 2010). Therefore, metaphors can express the same meaning even if they are different (Lakoff and Johnson, 2010). The word metaphor originates from Greek. Known as "metapherein" or "metafora," the word "meta" means "to change" and "pherein" means "to carry" (Levine, 2005). Individuals often use metaphors to make sense of their experiences and share these meanings interactively with others (Craig, 2018). Metaphors have been intensively researched in various fields of social sciences, especially since the 1980s (Aydın and Pehlivan, 2010). In Turkey, many studies on metaphors are conducted in various disciplines of social sciences, particularly in educational science. Sports sciences is a field where analogies can be used frequently both in theory and in practice, and are also very favourable to metaphor creation.

Upon examining the literature, different studies reveal metaphorical perceptions of primary school students towards physical education classes, football referees' perceptions of fair play, gifted students' perceptions of physical education classes and teachers, disabled athletes' perceptions of coaches and sports, and university students' perceptions of sports (Arslan, Tekkurşun Demir, İlhan and Mutlu Bozkurt, 2019; Gür and Taşkın, 2022; Pekel, et. al, 2023; Yetim and Kalfa, 2019; Yılmaz, Esentürk, Tekkurşun Demir, and İlhan, 2017). Research on curling athletes includes studies examining their levels of continuous anxiety, problem-

solving skills, and mental endurance (Ağduman, 2023; Süleymanoğulları and Tozoğlu, 2021). Additionally, there are studies on metaphorical perceptions directly related to the sports branches of rugby and korfball athletes (Erarslan, Halıcı, and Livmercan, 2022; Pekel, et al, 2023). However, no studies have been found to determine the metaphorical perceptions of curling athletes regarding their branch.

The aim of this research is to determine the perceptions of actively competing curling athletes regarding the concept of curling and how they interpret this concept. According to Lakoff and Johnson (2010), metaphors can be a guide for our future actions. It is believed that the research will contribute to the literature by expressing the thoughts of curling athletes about their branch, thereby shaping and, if necessary, altering the approaches of coaches, athletes, and the branch itself.

Material and Method

Ethics Committee Permission

The research was implemented after the ethics committee decision of Gazi University dated 26.12.2023 and numbered E-77082166-604.01-848812 was obtained.

Research Model

This study was designed as a phenomenological study, which is one of the qualitative research designs, aiming to explore the perceptions of individuals interested in the sport of curling. Phenomenological studies aim to reveal individuals' experiences and perceptions related to a specific phenomenon, as well as the meanings they attribute to these perceptions (Yıldırım and Şimşek, 2021). The metaphor method, on the other hand, is used to uncover perceptions on a subject or phenomenon. In this context, metaphors were utilized to determine the perceptions of individuals who are licensed and actively involved in the sport of curling.

Research Group

The research group consisted of a total of 60 athletes, 36 women and 24 men, who took part in the matches to qualify for the Turkish 2nd league during the 2023-2024 season. The ages of the athletes ranged from 14 to 31, with an average age of 18.

Data Collection Tool

The data collection tool was designed in two stages, in line with expert advice. Firstly, the demographic characteristics of the study were analysed; secondly, the phrase "Curling is similar to... because..." was used to determine active curlers' perceptions of the sport. The participants completed the given sentence and explained the metaphor they used with the expression "because". The researchers were careful not to use any directive expression when giving instructions to the participants.

Data Analysis

The obtained data were analysed using the content analysis method, starting with an examination of the forms in the analysis process. Subsequently, 3 forms that did not contain metaphors and meaningful explanations, were excluded from the scope of the study. The remaining forms were numbered and listed. Then, the category development stage was initiated, and the relationship between metaphors and explanations was evaluated. They were matched with conceptual categories that the researchers reached a consensus on. As a result of the analysis, similar expressions were categorized, grouped under themes, interpreted, and reported. To ensure the reliability of the data analysis, the data were evaluated by 3 field experts and the results were compared. The formula developed by Miles and Huberman in

1994 was used for the reliability of data analysis. During the research process, a total of 29 metaphors were generated, and disagreement was identified on 2 metaphors (competition and dart). The average reliability among the coders was found to be 93% [25 / (25 + 2) x 100 = 93%]. According to these results, the research achieves the desired level of reliability.

Findings

In this section, demographic information of curling athletes, the metaphors, categories and explanations about their sports are presented with examples.

Table 1. Demographic characteristics of the participants

Variant		F	%
Gender	Female	36	60
	Male	24	40
Age	14-18	37	61.67
	19-23	13	21.66
	24+	10	16.67
Sport Age	1-2	28	46.67
	3-4	18	30
	5+	14	23.33
Perceived Income Level	Low	5	8.33
	Moderate	44	73.34
	High	11	18.33
		60	**%100**

Table 2. Metaphors developed by curling athletes for the concept of curling

Metaphor sequence	Metaphor name	f	Metaphor sequence	Metaphor name	f
1	Future	7	16	Chess	1
2	Fun	5	17	Milestone	1
3	Life	7	18	Career	1
4	Part of Life	3	19	School	1
5	Everything	3	20	Food	1
6	Family	3	21	Education	1
7	Work	3	22	Competition	1
8	Trust	2	23	Dart	1
9	Home	2	24	Brain Exercise	1
10	Activity	2	25	The Adventure of Life	1
11	Like	2	26	A Branch of Life	1
12	Friend	2	27	Hometown	1
13	Hobby	2	28	Friend	1
14	Goal	2	29	Passion	1
15	Meditation	1			
				TOTAL OPINION	**60**

When Table 2 is analysed, it is seen that curling athletes produced a total of 29 types of metaphors related to the concept of "Curling" and expressed 60 opinions for this concept. Future (7), Life (7), Entertainment (5) metaphors were found to be the most repeated metaphors. Curling athletes generally made analogies to abstract expressions (trust, hobby, entertainment, activity, love, passion, purpose, meditation, etc.) to explain the concept of curling. According to the frequencies of the metaphors, it was determined that the majority of the metaphors were metaphors that curling is life.

When the metaphors developed by curling athletes about curling are evaluated together with their explanations, their classification as four categories is shown in Table 3.

Table 3. Distribution of metaphors developed by curling athletes according to categories

Categories	Number of metaphors (f)	%
1. Development	10	34.48
2. Relaxing Element	8	27.59
3. Life	6	20.69
4. Social Environment	5	17.24
	TOTAL (29)	**100.0**

According to Table 3, the athletes stated metaphors under four categories for the concept of curling. These are development (10-34,48%), relaxing element (8-27,58%), life (6-20,68%) and social environment (5-17,24%) categories.

Examples of categories and participants' explanatory statements within these categories are given between Table 4 and Table 7.

Table 4. Metaphors and Explanation Statements of "Development" Category.

Category	Number of Metaphors (f=10)
1.Development	Work (3), Career (1), School (1), Purpose (2), Chess (1), Darts (1), Brain Exercise (1), Education (1), Competition (1), Milestone (1)
Extracts from athletes' comments; *Work*; Curling is my job and I love my profession (P54). *Chess*; Strategically, we try to remove the opponent's piece and leave our own piece inside. (P48) *Darts*; because we try to make our throws reach the exact target. (P59) *Purpose*; I had no purpose before I started curling. Now it is for my future. (P52) *Milestone*; My life became beautiful with this sport. (P49) *Brain Exercise*; We have to develop a strategy according to the points where the stones stand. And our strategy may vary in every throw. Curling is a brain exercise for me because we put the strategy we think into practice. (P60)	

As seen in Table 4, a total of 10 metaphors were mentioned in the category of "development" related to the concept of curling. As it is understood from the explanatory statements, it is understood that the participants consider curling as their future job and they create a life plan for this branch.

Table 5. Metaphors and explanation statements of "*relaxing element*" category.

Category	Number of Metaphors (f=8)
2.Relaxing Element	Fun (5), Hobby (2), Meditation (1), Activity (2), Food (1), Trust (2), Like (2), Passion (1)
Extracts from athletes' comments; *Pleasure;* I really enjoy curling, the sense of competition is very satisfying (P33). *Activity*; A branch of sport that I use in my spare time (P42). *Like*; I spend the most important and happiest moments of my time here (P45). *Confidence*; I have moved away from my bad environment (P28) *Food*; Just as food is a vital necessity, curling is a necessity for my dreams. (P40) *Hobbies*; I use my free time (P35)	

As seen in Table 5, a total of 8 metaphors were mentioned in the category of "relaxing element" related to the concept of curling. As it is understood from the explanatory statements, it is seen that the participants see curling as an element of entertainment and evaluate it as a hobby and meditation area for the purpose of utilising their free time.

Table 6. Metaphors and explanation statements of "life" category

Category	Number of Metaphors (f=6)

3.Life	Life (7), future (7), life adventure (1), part of my life (3), a branch of life (1), everything (3)

Extracts from athletes' comments;
Life; I spend most of my time with curling and my expectations are based on curling... (P33)
Life adventure; I have never had such a great opportunity in my life. I also want to build my future through curling. (P1)
Future; My dream is to be a national athlete. (P19)
Future; I want to be a personal trainer. (P14)
Everything; In order to achieve my goals, it's my everything (P21)
A branch of life; the only sport I love and value (P4)

As seen in Table 6, a total of 6 metaphors were mentioned in the category of "life" related to the concept of curling. It is clearly seen in the explanatory statements that the participants see curling as the most important element in their lives and that they take it to the centre of their lives.

Table 7. Metaphors and explanation statements of "social environment" category

Category	**Number of Metaphors (f=5)**
4.Social Environment	Friends (2), family (3), hometown (1), home (2), mate (1)

Extracts from athletes' comments;
Friend; When I come to the field, just like when we lean on the shoulder of a friend and forget our problems, I forget all my problems here. (P24)
Family; I get along well with my teammates and my club. It is a team sport. My team is like my family (P31).
Hometown; I love and get attached to it like I love my hometown (P27).
Home; a place where I can express myself. (P30).
Mate; I enjoy as I spend time (P29).

As seen in Table 7, a total of 5 metaphors were mentioned in the category of "social environment" related to the concept of curling. As it is understood from the explanatory statements, it is seen that the participants evaluate curling as a sincere environment and associate it with elements such as friends and family.

Discussion and Conclusion

In this research, the aim was to determine athletes' perceptions of the concept of curling through metaphors. At the end of the study, it was found that athletes expressed a variety of metaphors related to the concept of curling. In this context, they developed a total of 29 different metaphors related to the concept of curling. Upon examining these metaphors, the most frequently mentioned ones in terms of their frequency related to the concept of curling were future, life, fun, family, and everything. These 29 metaphors were mentioned a total of 60 times. These metaphors were categorized into 4 different categories, namely "development, relaxing element, life, and social environment," based on their frequency of occurrence.

In the category of Development, it is observed that participants created 10 different metaphors. These are; "job, career, school, purpose, chess, dart, brain exercise, education, competition, turning point." A total of 34.48% of the metaphors belong to this category. In a study investigating sports managers' metaphorical perceptions of the concept of organization, it is noted that managers mentioned a total of 8 metaphors in the "Purpose" category related to organization. From the descriptive statements given for each metaphor, it is observed that participants emphasized that every organization has a specific purpose, such as education or for a festival, highlighting that every organization is done with a purpose (Kurtipek and Güngör, 2019). In a study conducted by Yetim and Kalfa in 2019, university students taking a

sports activity class responded to the prompt "Write down the first three words that come to your mind when you hear the word 'sports'" with 306 different words describing sports. As a result, metaphors such as physical development, development, self-improvement, purpose, competition, education, and school support our study.

In the Relaxing Element category, it is seen that participants created 8 different metaphors. These are; "fun, hobby, meditation, activity, food, trust, love, passion." A total of 27.58% of the metaphors belong to this category. In a study investigating university students' metaphorical perceptions of sports, it is also observed that the most frequently created metaphors fall under the relaxation category. According to the responses given in the relaxation category, it is seen that students perceive sports as a means of relaxation, having fun, and escaping from mental problems (Yetim and Kalfa, 2019). In a study examining the metaphoric perceptions of sports by 208 university students studying in three different faculties: education, medical, and sports sciences, it is observed that the most produced metaphors were related to the peace-happiness category (Sevinç and Ergenç, 2017). In a research examining the metaphorical perceptions of korfball sport, it is also parallel to our study that the third most frequent metaphor for korfball players regarding korfball is entertainment (Erarslan, Halıcı, and Livmercan; 2022).

In the Life category, it is observed that participants created 6 different metaphors. These are; "life, future, life adventure, part of my life, branch of life, everything." A total of 20.68% of the metaphors belong to this category. It has been determined that abstract concepts such as the future and life are often used as metaphors for the concept of curling. This is particularly evident as athletes, whose average age is 18, primarily perceive curling as life and the future, clearly showing that they shape their lives around this sport and plan their futures accordingly. In a study examining university students' metaphorical perceptions of sports, it was found that life, a part of life, and a lifestyle are among the most frequently perceived metaphors (Yetim and Kalfa, 2019). Similarly, badminton athletes also identify badminton with their lives (Yetim, Bıdıl, and Argan, 2015). In a study examining the metaphorical perceptions of rafting athletes regarding the concept of rafting, it was found that the most identified metaphors are life and love (Şirin et al., 2012). This clearly shows that participants consider rafting as a part of life and an activity related to life itself. In Ayyıldız's 2016 study on university students' metaphorical perceptions of the concept of dance, it was found that the most cited metaphors are life and water. This indicates that students perceive dance as a part of their lives. In a study examining middle school students' metaphorical perceptions of distance and face-to-face physical education and sports classes, it was found that students emphasize "health, life, and fun" the most regarding physical education classes (Yavuz, Yavuz, and İlhan, 2022).

In the social environment category, it is observed that participants created 5 different metaphors. These are "friend, family, homeland, home, companion." A total of 17.24% of the metaphors belong to this category. In a study examining the metaphors of summer sports school athletes regarding their coaches, it was found that athletes produced 132 metaphors. The most produced metaphors regarding the concept of a coach are father (11.8%), friend (10.6%), older brother (9.6%), and older sister (6.9%). It is observed that athletes identify their coaches with a family member inside the home (Güler, 2017).

The perceptions of individuals who are members of sports clubs regarding the concept of sports were attempted to be identified through metaphors. The most produced metaphors by participants are family, tree, home, rainbow, and friendship (Kurtipek, 2019). Similarly, in a study determining the perceptions of sports managers regarding the concept of organization

through metaphors, it was found that the most produced metaphors by sports managers are family, car, human body, and puzzle (Kurtipek and Güngör, 2019).

In conclusion, the metaphors expressed by curling athletes participating in the promotion competitions to the 2nd league are presented in a wide range. A total of 60 athletes expressed 29 different metaphors. The obtained metaphors are categorized into 4 dimensions: "Development," "Relaxing Element," "Life," and "Social Environment," with the most produced metaphors being life, future, and entertainment. It was observed during the interviews that the limited opportunities in the eastern regions and the athletes, whose average age is 18, strive to build their futures through curling and that many of them dream of becoming national athletes. Their placing curling at the center of their lives and expressing metaphors such as life, life adventure, part of life, and branch of life supports this situation. This research is limited with the athletes participating in the second stage of the 2nd League promotion competitions. It can be recommended to conduct similar studies with a more comprehensive sample of athletes engaged in different winter sports branches or curling sports.

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Investigation of Athletes Mental Training and Exercise Addiction Levels

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Abstract

This study was conducted to examine the relationship between mental training and exercise addiction in exercising athletes. The study group of the research consisted of a total of 243 university students, 94 (38.7%) female and 149 (61.3%) male, studying at the Faculty of Sports Sciences. "Personal Information Form", "Mental Training Inventory in Sport" and "Exercise Addiction Scale" were applied to the participants as data collection tools. In the analysis of the data, firstly, it was checked whether the research group had a normal distribution (skewness and kurtosis values). Since normal distribution was not obtained, Mann-Whitney U test were used. In the findings, it was found that male athletes were higher than female athletes in the sub-dimensions of mental performance skills, exercise addiction and postponement of individual social needs and conflict ($p<0.05$). When the differences between departments were analyzed, no significant difference was found in athletes' mental training and exercise addiction scores ($p>0.05$). When the relationship between mental training and exercise addiction was examined, it was seen that there was a positive moderate relationship ($p<0.05$). As a result, it was concluded that the mental training and exercise addiction levels of the participants differed according to gender, but did not differ significantly across different departments they studied.

Keywords: Mental training, Exercise addiction, Athlete

Introduction

Sport, which usually focuses on physical training, has changed over time and nowadays psychological training has gained an important place to improve athletic performance (Kaplan & Andre, 2021). Today, with the understanding of psychological factors in athlete performance, athletes benefit from mental training as well as conditioning (Altıntaş & Akalan, 2008).

Mental training in sport is defined as the systematic and consistent application of mental or psychological skills in order to improve performance, increase enjoyment of exercise and achieve satisfaction in physical activity. Mental training enables athletes to identify obstacles hindering their performance and overcome them through psychological tests. It is suggested that mental skills and mental techniques should be evaluated separately in order to make more accurate interpretations when examining the effects of these trainings on performance (Yarayan & İlhan, 2018).

Exercise can be conceptualized as a planned, structured and repetitive set of complex movement activities performed with sufficient frequency, intensity and duration to be effective in promoting healthy living and also plays an important role in disease prevention (Berczik et al. 2012). Exercise improves mental health by reducing anxiety, depression and negative mood and improving self-esteem and cognitive function (Sharma et al. 2006). During exercise, metabolites and heat are produced, which affect the constant state of the internal environment. Depending on the form of exercise, sooner or later feelings of fatigue and exhaustion will appear. The physiological role of these sensations is to protect the exerciser from the harmful effects of exercise (Ament & Verkerke, 2009). However, the replacement of activities done to be healthy with exercises that increase in load over time, tire and wear out the body, and become indispensable to the extent of disease causes negative effects. One of the important concepts addressed when expressing the negative aspects of exercise is exercise addiction (Demir & Türkeli, 2019).

Exercise addiction (EA) describes a state of excessive or abusive exercise behavior in which moderate to intense physical activity becomes a compulsive behavior (Godoy-Izquierdo et al. 2023). 'Addicted' exercisers are likely to exercise for intrinsic rewards and experience uncomfortable feelings of withdrawal when they are unable to exercise (Landolfi, 2013). In addition to physical injuries and re-injuries caused by exaggerated amounts of exercise without proper rest and recovery, social and psychological difficulties are also evident in exercise addiction. Inability to sleep and concentrate, restlessness and painful withdrawal symptoms (similar to substance dependence) are also daily symptoms in exercise addiction. These negative consequences are so severe that they interfere with normal daily functioning. Exercise addiction is therefore a serious psychological illness that clinicians should understand, recognize and prevent as much as possible (Vardar, 2012).

Mental training is a psychological skill and an important factor in improving athlete performance. It shows that mental training has positive effects on performance and other psychological skills. Mental training has positive effects on performance and psychological skills, but excessive exercise can become addictive over time. In the study, it can be said that exercise is beneficial but too much of it can have a negative effect on individuals. When the literature is examined, although studies have been conducted on exercise addiction (Cicioğlu et al. 2019; Demir & Türkeli, 2019; Zengin & Kirkbir, 2020; Çingöz & Mavibaş, 2022; Erdoğan & Mutlu Bozkurt, 2022; Aydın & Soyer, 2023) and mental training (Kozak et al. 2021; Arı et al. 2022; Cevahircioğlu et al. 2023) no research has explored the relationship between these two concepts. From this point of view, it is thought that it is a matter of

curiosity whether there is a relationship between mental training and exercise addiction of sport sciences faculty students. For this reason, this study was conducted to examine the mental training and exercise addiction levels of students studying at the faculty of sport sciences in terms of some variables.

Material and Method

Ethics Committee Permission

This study was carried out based on the permission received from Tekirdağ Namık Kemal University Scientific Research and Publication Ethics Committee with the decision numbered 442898 dated 10.05.2024.

Research Model

A relational screening design, one of the quantitative research approach, was used in the research. Relational screening designs are research models that aim to determine the existence and/or degree of co-variation between two or more variables (Karasar, 2011).

Research Group

The appropriate sampling method was used in the study. Appropriate sampling is defined as selecting the sample from accessible, easily applicable units and using individuals who want to participate in the study voluntarily (Büyüköztürk et al., 2019). The study consists of a total of 243 students (mean age = 21,08±,16; sports age=7,79±,27) years sample includes 94 female students (mean age = 20,80±2,25 years) and 149 male students (mean age = 21,26±2,82 years), studying at Tekirdağ Namık Kemal University Faculty of Sports Sciences in the spring semester of the 2023-2024 academic year.

Table 1. Demographic information of the participants

Variables	Group	Frequency	Percentage
Gender	Women	94	38.7
	Men	149	61.3
Studying Department	Physical Education and Sports Teaching	129	53.1
	Sports Management	114	46.9

Table 2. Descriptive statistics of scale and sub-dimension scores

Scale and Sub-Dimensions	N	Mean	SD	Skewness	Kurtosis
Mental training inventory in sports	243	79.13	12.31	-1.855	7.343
Mental basic skills	243	15.86	2.82	-1.347	3.936
Mental performance skills	243	22.82	4.16	-1.295	3.677
Interpersonal skills	243	16.65	2.76	-1.912	6.660
Intrapersonal	243	11.77	2.18	-1.343	3.202
Mental stimulation	243	12.00	2.15	-1.284	3.725

Exercise addiction scale	243	60.34	10.91	-.616	1.756
Overfocus and emotional change	243	27.99	4.55	-.542	4.241
Postponement of individual-social needs and conflict	243	18.27	5.24	-.268	-.734
Development of tolerance and passion	243	14.06	3.51	-1.203	.137

N: Number; SD: Standard deviation

Data Collection

Data were collected through a survey with the voluntary participation of students at Tekirdağ Namık Kemal University Faculty of Sports Sciences. In this context, volunteer participants were informed about the surveys and they were informed that that their answers would only be used for scientific research.

Data Collection Tool

The Scale Used in the Research consists of three (3) sections. One of these is the personal information form and provides information about the gender, department, age and sports age of the participants.

The Sports Mental Training Inventory (SZAE) developed by Behnke et al. (2017) and adapted to Turkish by Yarayan and İlhan (2018) was used to measure the participants' mental training levels, and the Exercise Addiction Scale (EBÖ) developed by Tekkurşun-Demir, Hazar and Cicioğlu (2018) was used to measure exercise addiction.

Sports Mental Training Questionnaire (SMTQ): This scale, developed to measure mental techniques and skills in the sports environment, is a 5-point Likert-type scale consisting of 5 sub-dimensions and 20 items. The evaluation of the answers given to the questions is as follows: 5 for strongly agree, 1 for strongly disagree (Yarayan & İlhan, 2018).

Exercise Addiction Scale (EAS): The scale consists of three sub-dimensions: “excessive focus and emotional change”, “postponement of individual-social needs and conflict”, “tolerance development and passion”. EAS consists of a total of 17 items and does not include reverse items. The score ranges of the Exercise Addiction Scale, developed in a five-point Likert type, are as follows: “1-17 normal group, 18-34 low-risk group, 35-51 risk group, 52-69 dependent group, 70-85 highly dependent group” (Tekkurşun Demir et al., 2018).

Data Analysis

In the statistical analysis of the data, it was checked whether it had a normal distribution (skewness and kurtosis values -1.5, +1.5) (Tabachnick and Fidell, 2013). According to the normality test, nonparametric tests were used for data that did not show normal distribution. Accordingly, the Mann-Whitney U test was applied to independent groups. Spearman Rank Correlation test was applied to examine the relationship between the data. SPSS 18 statistical package program was used to evaluate the data obtained from the participants. If the coefficient is less than 0.30, the relationship is considered weak; if it is between 0.30 and 0.70, it is considered moderate; if it is greater than 0.70, it is considered high (Köklü, Büyüköztürk & Çokluk, 2007). Effect sizes (Cohen's d) were calculated for the significance of the comparisons. The thresholds for effect size statistics are as follows: <0.20 = insignificant, 0.20-0.59 small, 0.6-1.19 = medium, 1.2-1.99 = large, ≥ 2.0 very large (Hopkins et al., 2009). The significance level was taken as 0.05.

Table 3. Internal consistency coefficient (α) of mental training inventory and exercise addiction scale in sports

Scales and Sub-dimensions	Number of Items	Cronbach Alpha (α)
Mental training inventory in sports	20	.947
Mental basic skills	4	.824
Mental performance skills	6	.840
Interpersonal skills	4	.892
Intrapersonal	3	.802
Mental stimulation	3	.789
Exercise addiction scale	17	.881
Overfocus and emotional change	7	.860
Postponement of individual-social needs and conflict	6	.772
Development of tolerance and passion	4	.829

In Table 3, the Cronbach α coefficients of the attitude scale and sub-dimensions of the mental training inventory in sports are 70 and above, which is considered sufficient for the reliability of the test scores. In line with these findings, it was concluded that the data of the Mental Training Inventory in Sports and Exercise Addiction Scale were reliable (Kalaycı, 2010).

Findings

Table 4. Mental training and exercise addiction in sports according to gender variable Mann Whitney U test results

Variables	N	Gender	Mean Rank	Sum of Ranks	U	P	η²
Mental basic skills	94	Women	112.84	10607.00	6142.000	.102	
	149	Men	127.78	19039.00			
Mental performance skills	94	Women	105.26	11232.00	5429.500	.003*	.318
	149	Men	132.56	18414.00			
Interpersonal skills	94	Women	119.49	11232.00	6767.000	.649	
	149	Men	123.58	18414.00			
Intrapersonal	94	Women	120.37	11315.00	6850.000	.794	
	149	Men	123.03	18331.00			
Mental stimulation	94	Women	122.11	11478.00	6993.000	.985	
	149	Men	121.93	18168.00			
Mental training	94	Women	113.59	10677.50	6212.500	.138	

inventory in sports	149	Men	127.31	18968.50			
Overfocus and emotional change	94	Women	116.00	10904.00	6439.000	.288	
	149	Men	125.79	18742.00			
Postponement of individual-social needs and conflict	94	Women	107.79	10132.00	5667.000	.012*	.306
	149	Men	130.97	19514.00			
Development of tolerance and passion	94	Women	115.29	10837.00	6372.000	.233	
	149	Men	126.23	18809.00			
Exercise addiction	94	Women	110.44	10381.50	5916.500	.042*	.245
	149	Men	129.29	19264.50			

*p<.05

Table 4 shows the Mann Whitney U test analysis to reveal the differences in the levels of mental training and exercise addiction in sports according to the gender of the participants. A significant difference was found in the mental performance skills, postponement of individual-social needs and conflict sub-dimensions and the exercise addiction scale of male and female participants ($p<0.05$). When the effect size value was examined, it was determined that the female and male athletes variable had a small effect on the mental performance skills (η^2 =.318), postponement of individual-social needs and conflict (η^2 =30) sub-dimensions and the exercise addiction (η^2 =.245) scale.

Table 5. Results of the Mann Whitney U test for mental training and exercise addiction in sports according to the department variable

Variables	N	Department	Mean Rank	Sum of Ranks	U	P
Mental basic skills	129	Physical Education and Sports Teac.	126.43	16309.00	6782.000	.290
	114	Sports Management	116.99	13337.00		
Mental performance skills	129	Physical Education and Sports Teac.	124.47	16056.00	7035.000	.557
	114	Sports Management	119.21	13590.00		
Interpersonal skills	129	Physical Education and Sports Teac.	127.17	16405.50	6685.500	.208
	114	Sports Management	116.14	13240.50		
Intrapersonal	129	Physical Education and Sports Teac.	126.96	16378.00	6713.000	.221
	114	Sports Management	116.39	13268.00		
Mental stimulation	129	Physical Education	126.74	16350.00	6741.000	.249

		and Sports Teac.				
	114	Sports Management	116.63	13296.00		
Mental training inventory in sports	129	Physical Education and Sports Teac.	127.21	16409.50	6681.500	.209
	114	Sports Management	116.11	13236.50		
Overfocus and emotional change	129	Physical Education and Sports Teac.	122.74	15833.00	7258.000	.861
	114	Sports Management	121.17	13813.00		
Postponement of individual-social needs and conflict	129	Physical Education and Sports Teac.	122.24	15769.00	7322.000	.955
	114	Sports Management	121.73	13877.00		
Development of tolerance and passion	129	Physical Education and Sports Teac.	118.43	15277.50	6892.500	.396
	114	Sports Management	126.04	14368.50		
Exercise addiction	129	Physical Education and Sports Teac.	122.22	15767.00	7324.000	.958
	114	Sports Management	121.75	13879.00		

In Table 5, no significant difference was found as a result of the Mann Whitney U test conducted between the mental training and exercise addiction levels in sports according to the departments in which the participants studied (p>.05).

Table 6. The relationship between the sports year variable and mental training and exercise addiction in sports

Variables		**Mental training inventory in sports**	**Exercise addiction**
Sports age	**rho**	.252**	.157**
	p	000	.015

*p<.05

In Table 6, it was found that there was a low level positive significant relationship between the sports year of the students studying at the faculty of sports sciences and mental training and exercise addiction (p<0.05).

Table 7. Relationship between mental training and exercise addiction in sports

Variables	**MBS**	**MPS**	**IS**	**IP**	**MS**	**SMTQ**	**OEC**	**PISNC**	**DTP**	**EAS**

Mental basic skills	1	.633*	.636**	.483**	.598**	.820**	.491**	.159*	.367*	.362**
Mental performance skills	.633**	1	.531**	.453**	.567**	.816**	.389**	.260**	.372**	.366**
Interpersonal skills	.636**	.531**	1	.458**	.732**	.796**	.442**	-.026	.224**	.190**
Intrapersonal	.483**	.453**	.458**	1	.539**	.675**	.365**	.083	.276**	.258**
Mental stimulation	.598**	.567**	.732**	.539**	1	.816**	.480**	.063	.344**	.292**
Mental training inventory in sports	.820**	.816**	.796**	.675**	.816**	1	.498**	.142*	.367**	.348**
Overfocus and emotional change	.491**	.389**	.442**	.365**	.480**	.498**	1	.294**	.561**	.700**
Postponement of individual-social needs and conflict	.159*	.260**	-.026	.083	.063	.142*	.294**	1	.615**	.835**
Development of tolerance and passion	.367**	.372**	.224	.276**	.344**	.367**	.561**	.615**	1	.860**
Exercise addiction scale	.362**	.366*	.190**	.258**	.292**	.348**	.700**	.835**	.860**	1

*p<.05

Table 7 shows the results of the spearman rank correlation analysis conducted to determine whether there is a relationship between EAS and SMTQ. According to the analysis, it was determined that there was a positive and moderately significant relationship between the "mental training" and "exercise addiction" of the participants participating in the study ($p<0.05$). While a positive moderately significant difference was found between the "mental training inventory in sports" and the "overfocus and emotional change" and "tolerance development and passion" sub-dimensions, a positive low level significant difference was found between the "postponement of individual social needs and conflict" sub-dimension. According to the findings obtained from the participants in the study; it was determined that there was a positive moderately significant difference between the "exercise addiction scale" and the "basic mental skills" and "mental performance skills" sub-dimensions, while there was a positive low level significant difference between the "interpersonal skills", "intrapersonel" and "mental visualization" sub-dimensions.

Discussion and Conclusion

In the study, the mental training and exercise addiction levels of students studying at the faculty of sport sciences were examined in terms of various variables. According to the findings of this study, high was found that the mean scores of the participants from the mental training inventory in sport and exercise addiction. As a result of the analyzes conducted on the

research group included in the study, it was determined that there was a significant difference in the mental performance skills sub-dimension of the mental training levels of the athletes in terms of gender variable, there was a significant difference between male and female students in terms of postponement of individual-social needs and conflict sub-dimensions and exercise addiction. Erman et al. (2023) found that there was a statistically significant difference in the mental performance skill levels of male athletes compared to female athletes. In another study conducted on athletes, it was emphasized that there was a result in favor of male students in the sub-dimension of mental performance skills, while they reported that mental training levels did not differ according to gender status variable (Yüksel & Orhan, 2021). When the literature is examined, unlike the findings of this research, there are also studies reporting that female athletes have high mental skills (Kara & Hoşver, 2019; Kozak et al., 2021; Arı et al., 2022). With this, in their study on exercise addiction of students studying at the faculty of sports sciences Tekkurşun-Demir and Türkeli (2019) found that the postponement of individual-social needs and conflict sub-dimensions were statistically significant in male athletes compared to female athletes. In another similar study, they reported that there were significant differences between male and female participants as a result of comparing exercise addiction status, and that male participants had higher levels than female participants (Çingöz & Mavibaş, 2022). Contrary to these studies, when we examined another study, the level of exercise addiction was compared according to gender and it was found that there was no statistical difference (Gök, 2023). It is thought that the reason for these differences in the current research and the studies in the literature is due to the sample groups. At the same time, Habacha, Molinaro and Dosseville (2014) stated in their study that gender is a parameter that should be taken into consideration.

Another finding of the study, in the variable of the department they study in, no difference was detected. in the mean scores of the students' mental training and exercise addiction levels. Cevahircioğlu et al. (2023) stated that there was no statistically significant difference in the mental training scores of the participants according to the department variable. Therefore, we can say that the findings of the study support the findings of the current research. At the same time in another similar study, it was found that there was no statistically significant difference between the departments in which the students studied and their exercise addiction levels (Musa et al., 2021). At the same time in another similar study, it was found that there was no statistically significant difference between the departments in which the students studied and their exercise addiction levels (Musa et al., 2021). Tekkurşun-Demir and Türkeli (2019), students studying at the faculty participate emphasized that this situation is due to the fact in similar levels of exercise, think about similar levels of exercise during the day, and their recovery times and similar mental processes. On the other hand, in the studies conducted by Toktaş et al. (2022) and Üzgü et al. (2023), it was reported that there was a significant difference in the exercise addiction score averages of students studying at the faculty of sports sciences according to the department variable. For this reason, it can be said that the research findings include dissimilar results and differ from the findings of the current study. Since it is assumed that the students take different courses in the departments of sports sciences and their sports life experiences vary, it is thought that the lack of similarity between the findings is a natural result.

In addition, a positive significant relationship it has been detected between the participants' sports age and mental training and exercise addiction. Arı et al. (2022) reported a significant relationship between sports age and mental basic skills, mental performance skills and mental visualization skills sub-dimensions. Çelik and Güngör (2020) found that there was a positive and significant relationship between sports age and total scores of mental training in sports. In

their study on university students Çingöz and Mavibaş (2022), emphasized that there was a significant relationship as a result of comparing sports year and exercise addiction scores. In another similar study, was detected a relationship between the participants sports age and the total exercise addiction score (Cicioğlu et al., 2019). In addition to these studies, there are studies on the correlation of sports age with mental training and exercise addiction within the scope of the current literature (Kara and Hoşver, 2019; Öner and Cankurtaran, 2020; Erdoğan and Gülşen, 2020; Demirel and Cicioğlu, 2020; Aydın and Soyer, 2023). In this sense, the results obtained in the studies in the literature do not support the results of this study. It is thought that as the years of sports increase, the cognitive structures of athletes develop along with their physical structures. The increase in mental training levels in parallel with the increase in the sports year can be explained by this reason (Cevahircioğlu et al., 2023).

In the study, a significant relationship was detected between mental training and exercise addiction. In this context; while a positive moderately significant difference was found between the "mental training inventory in sports" scale and the "excessive focus and emotional change" and "tolerance development and passion" sub-dimensions, a positive low level significant difference was found between the "postponement of individual social needs and conflict" sub-dimension. According to the findings obtained from the participants in the study; it was determined that there was a positive moderately significant difference between the "exercise addiction scale" and the "basic mental skills" and "mental performance skills" sub-dimensions, while there was a positive low level significant difference between the "interpersonal skills", "Intrapersonal" and "mental visualization" sub-dimensions. Accordingly, it can be said that as a result of the increase in the exercise addiction levels of the participants, their mental basic and performance skills increased, but their interpersonal skills, Intrapersonal and mental visualization decreased. As a result of the current research, it was seen that there was no previous research conducted between these two scales in the literature.

Before the final results were drawn, it was determined limitation of the research when the universe of athletes was taken into consideration, the participants in this research represented students of a certain faculty, and the mental training skills and exercise addiction levels of the athletes were evaluated only with a scale. As a result, it was determined that the participants in the research group had high average scores for mental training skills in sports and exercise addiction, and that there was a positive, moderately significant relationship between mental training scores and exercise addiction scores. It was found that there were significant differences in mental performance skills, postponement of individual-social needs and conflict sub-dimensions and exercise addiction level of male and female athletes. It was concluded that the levels of mental training and exercise addiction in sports did not differ in terms of the department in which the participants studied. In addition, a significant relationship was found between students sports years and mental training and exercise addiction. In the light of these results, a directly proportional interaction was observed between the increase in exercise addiction of the athletes and the increase in their mental training levels. Since this study was conducted only on students at the Faculty of Sports Sciences, the research group can be expanded and conducted on more people in order to generalize these results. Similar studies conducted on individuals from different age groups and students studying in different disciplines can provide a more comprehensive understanding of the relationship between mental training and exercise addiction levels.

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The Influence of a Twelve Weeks Aerobic Exercise Regimen on Neuroticism in HIV Positive Clients in Uganda

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Abstract

Highly active antiretrovirals have led to a considerable drop in HIV-related morbidity and mortality and a large increase in the life expectancy of HIV positive individuals in Uganda. The likelihood of clinicians coming across people exhibiting neuroticism symptoms associated with the illness has been reported to be on the increase. As much as exercising has been established to have positive effects is alleviating such symptoms, it is noted that, 52% of the population do not follow an exercise regimen and the problem has persisted. This study assessed the influence of aerobic exercise on neuroticism symptoms in HIV positive clients attending an ART clinic in Uganda. A quasi-experimental research design with 67 volunteers in each of the pre- and post-test control groups. The results reveal that at the pre-test stage, all the experimental group participants reported experiencing some form of neuroticism. However, after the aerobic exercises, 80.8% of the experimental study participants reported having been relieved of neuroticism symptoms. In this instance, the experimental group's p-value was smaller than the alpha level (.05) since the test took a 95% threshold for significance. These results imply that aerobic exercises have a significant effect on reducing neuroticism in HIV positive clients on ART.

Keywords: Neuroticism, Aerobic exercise, HIV Positive Clients and Barbonian model

Introduction

Since the diagnosis of Acquired Immune Deficiency Syndrome (AIDS) in humans was made in Uganda in 1981, there have been substantial changes in the quality of human life (Okoroiwu et al., 2022). Human Immunodeficiency Virus (HIV), is a retrovirus that is part of the lentivirus genus, is the source of the illness, according to Bailes et al., (2002) The virus gradually destroys Clusters of Differentiation 4 (CD4) cells a subset of T-lymphocytes (t-cells) that are essential to the immune system in order to impair human immunity. O'Brien et al., (2016) state that when the immune system is severely weakened, there is an increased risk of opportunistic infections, which can lower one's functional work capacity and have additional psychological effects.

Highly Active Antiretroviral Therapy (HAART) has led to a considerable reduction in HIV-related morbidity and death as well as a significant rise in the life expectancy of HIV positive individuals. Therefore, the likelihood that clinicians will come across people exhibiting psychiatric symptoms of the illness is raising (Knights et al., 2017). A person's mental health may be impacted by the stress of managing a severe and protracted disease or condition, such as HIV. HIV+ individuals are more likely to experience anxiety, depression, and cognitive issues. For instance, one of the most prevalent mental health issues that patients with HIV encounter is depression (Arlin Cuncic, 2023). Neuroticism is a trait that helps determine a person's level of emotional stability. Some traits that are frequently linked to it include negative emotions, poor self-regulation (the inability to manage appetites), trouble managing stress, a strong reaction to perceived hazards, and a tendency to complain (Arlin Cuncic 2023). Although neuroticism symptoms were unrelated to CD4 and viral load, these variables were associated with increased reports of adverse ART effects and decreased health perceptions (Johnson and Neilands, 2007).

Furthermore, most studies carried out before this one imply that exercise may be helpful in treating a variety of HIV related symptoms and side effects of the infection and drugs (Ciccolo et al., 2004). Baldwin et al., (2016) indicates that frequent exercise is linked to better physical and mental health. For instance, people who are more physically active reported being considerably more extraverted and less neurotic than people who were less active. Mood significantly improved after the exercise session, with more neurotic people reporting the biggest benefits.

Ganiyu et al., (2013) in their study on physical exercises in Botswana found out that 52% of the population did not follow an exercise regimen. The most common reasons for not exercising were ignorance (65.7%), the conviction that exercising exacerbated their illness (57.6%), and the lack of an exercise partner (24.0%). Laura et al., (2016) also assessed in the context of rehabilitation, home exercise programme adherence is a big obstacle. There were many other contributing causes to this problem, including situational and spy chronological elements that are unique to each person. When prescribing customized workouts clinicians need to take these factors into account. Among them forgetting to work out, running out of time, and not being able to fit it into the daily schedule. This study employed Five A's Bardonian Model to prepare the participants to adhere to the exercise progamme.

Meta-analytic evaluations indicate that physical exercise and conscientiousness are positively correlated, with some mixed evidence suggesting a slight negative correlation with neuroticism (Rhodes and Boudreau, 2017). According to Rhodes and Boudreau (2017), the effect seems to be more noticeable while engaging in intense physical activity and less noticeable when engaging in lower-intensity lifestyle activities. The results of this study provide credence to the advantages of physical fitness on psychological well-

being. More specifically, individuals with higher levels of corticotrophin releasing factor showed a reduced correlation between neuroticism and depression. For teenagers with greater levels of neuroticism, encouraging physical fitness may be quite helpful (Yeatts et al., 2017). This study evaluated the effect of adherence counselling to retention in an exercise regiment and how that exercise will contribute to reducing the signs of neuroticism in HIV positive patients.

Literature in HIV management has greatly informed this study what is known about the physical and psychological health of people living with HIV. HIV has an immense impact on immune function and leaves one defenseless to opportunistic infections, according to initial research (Okoroiwu et al., 2022; O'Brien et al., 2016). HIV treatment has revolutionized since the early 1980s when HIV was identified as the cause of AIDS. Advances like HAART have played an important role in curbing morbidity and mortality (Knights et al., 2017). PLHIV are still not doing well, however, with regards to their physical and mental health despite recent advancements.

An important component of HIV treatment is mental health. Practitioners have seen an increase in psychiatric symptoms in PLHIV treatment has increased lifetime expectancy (Knights et al., 2017). Depression is the most common mental health condition among this group, and stress caused by having a chronic illness, such as HIV, can increase symptoms (Arlin Cuncic, 2023). Additionally, research has found that personality features like neuroticism, wherein a person lacks the ability to regulate their own emotions, correlate with the mental well-being of HIV patients (Arlin Cuncic, 2023; Johnson & Neilands, 2007). Such findings lead one to infer that the curing of the psychological and emotional effects of HIV is just as useful as curing its physical symptoms. Physical activity has also been found to be essential in boosting mental health and controlling HIV symptoms.

Evidence indicates that exercise improves psychological functioning, in addition to physical functioning. For example, chronic exercise has been linked with higher emotional stability, better mood, and lower neuroticism (Baldwin et al., 2016). Additionally, research shows that people with higher physical activity have improved mental health, including decreased anxiety and depression (Ciccolo et al., 2004). Compliance with physical exercise programs remains a problem, nonetheless, as participation is hampered by administrative inefficiencies, demotivation, and perception of aggravating an illness (Ganiyu et al., 2013; Laura et al., 2016). Apart from its physical benefits, research has shown that exercise may also reduce the psychological impact of neuroticism among individuals with HIV. Conscientiousness, which is positively correlated with physical activity, can reduce the negative outcomes of neuroticism, based on meta-analytic estimates (Rhodes & Boudreau, 2017).

As a result, adding exercise to the HIV treatment regime might prove to be a valid intervention in helping to better the physical and psychological wellbeing of HIV patients. The overall well-being of people with HIV is greatly determined by the incorporation of psychological care, for instance, adherence counseling, and physical exercise. The literature shows that in a bid to promote good health outcomes and well-being among people with HIV, clinicians must take into consideration providing care that is holistic in scope and addresses both physical and psychological needs of the individuals (Laura et al., 2016).

Material and Method

Ethics Committee Permission

The study was conducted in compliance with the World Medical Association's Code of Ethics, also known as the Declaration of Helsinki, and was approved by the Lacor Hospital Institutional Research and Ethical Committee (RHIREC) No 0183/07/2020. And thereafter approved by Uganda National Councill for Science and Technology Ref: HS 1276ES

Research Design

This study used a quasi-experimental research design with a pre-test and post-test control group.

Location of the Study

The study was conducted at the General Military Hospital (GMH) Bombo in Luwero District, Uganda.

Target Population

The target group included patients at General Military Hospital-Bombo who were HIV-positive and undergoing treatment; in particular, it included patients who were 20 years of age or older and on ART for at least a year. This group which made-up the bulk of the 4150 patients receiving ART treatment at GMH use the same access points and are assessed the same way.

Inclusion and Exclusion Criteria

Inclusion criteria encompassed clients meeting specific conditions such as being asymptomatic, on ART for 12 months and more, and volunteering for aerobic exercise sessions. Exclusion criteria considered limitations to exercise, opportunistic infections, signs and symptoms of HIV disease, and the age category of children, adolescents, and clients on ART for less than 12 months.

Sampling Procedure and Sample Size

3300 clients meeting the eligibility criteria
135 volunteered to take part in the study volunteers were chosen due to the nature of the participants, being HIV positive clients which is highly stigmatizing and participants needed to commit more time to attend atleast 3 sessions a week
01 eliminated by the physical activity readiness
134 allocated to the two groups 67 to experimental and 67 to control
18 dropped out from experimental group and 18 were selected at random and dropped from the control group to make it easy to compare the two groups
49 in experimental completed the sessions
Quantitative data were analyzed using two-sample t-tests, with a significance level set at $p \leq 0.05$. The Statistical Package for Social Sciences (SPSS) version 20.0 was used for all analyses.

Data Collection Procedure

Five A's psychological counselling framework Bardonian model was used to prepare participants for the exercise and also ensure adherence to the aerobic exercise programme. The five A's involves the following:

Assess: assessed the participants' beliefs behaviour and knowledge of exercise and given information where it was needed.

Advise: advised on specific information about aerobic exercise focussing on frequency, intensity, time and type (FITT factors)

Agree: based on the participants' desire and self-assurance in their capacity to modify their behavior, we jointly established targets. We also decided on the times so that each person

could choose their most convenient time, but everyone was to receive training in the afternoon.

Assist: assisted to identify personal barriers strategies, problem solving techniques and social environmental support needed during the time of training.

Arrange: arrangements were made with specific plans to follow and grouped the experimental participants those with similar preferences together mainly the days selected.

This helped the study to come up with personal action plans for the participants this may have contributed to ensuring adherence to exercise. The study listed specific goals in behavioural terms listed barriers and came up with strategies to address barriers. Follow-up specific plans were made including formation of whatsApp groups for each exercise day. Shared plans with the practice teams and all the research assistants. (HIV prevention and treatment guideline, 2020).

The clients were briefed on their rights and asked to sign informed consent. They were asked to fill self-administered physical activity readiness questionnaire (PAR-Q) to ascertain their readiness to exercise and if there any exercise limitations.

They were informed about what was involved in the exercise. The exercises included brisk walking, jogging and aerobic dance at moderate intensity. The days that the participants chose to attend, knowing that they would have time, determined how they were grouped. At least three times a week, each subject attended under the careful supervision of the research assistants, fitness coaches and the researcher. Water was available for use during the sessions, and for those who needed it afterward, there was a handy restroom. Every session began with five minutes of warm-up, stretching, and aerobic dance exercise. It also included five minutes of cool-down exercises and relaxation. The ACSM guidelines were followed for all forms of exercise training (Colberg et al., 2016).

Each client in the study was asked questions in the modified MOH psychosocial assessment tool only part of neuroticism by a technical staff that had the ability to understand and interpret the answers given by the clients.

Sub-groups were formed according to the days selected and the time of exercise set with the participants. The intervention included a structured aerobic exercise program done under the supervision of the researcher and under the instruction of fitness trainers. The exercises were performed according to a five-phase aerobic protocol constructed as per the ACSM standards (Nicholas et al., 2024). Throughout the course of the program, jogging, aerobic dance, and thirty minutes of brisk walking were conducted by the volunteers, five days a week, facilitated by music in the background with a controlled tempo. The progression of workout sessions from the beginning to end was as follows: Week 1-2 tempo of 120 beats per minute, Week 3 -5, 130 beats per minute, Week 6-7 140 beats per minute, and Week 8 to 12 150 beats per minute. All exercises began with a warm-up of five minutes and then stretching exercises. A minimum of 25 minutes of aerobic exercise. Five minutes of relaxing exercise and a cool-down.

Data Analysis and Presentation

The data collected predictive analytics to determine the participants' engagement in physical activities. Where the information given in the questionnaire were categorised, classified, summarised, tabulated and thereafter participants that did not meet the criteria were replaced. Quantitative data was analysed using two sample t-test to compare the means for two different samples namely experimental and control group. P-values less than 0.05 were

regarded as statistically significant. Version 20.0 of the Statistical Package for Social Sciences (SPSS) was used for all analysis.

Findings

Response rate of study participants

Out of a total of 135 participants who had voluntarily accepted and qualified to take part in the study were randomly allocated in the experimental and control groups each taking 67 participants. A total of 18 participants dropped out from the experiment group and 18 were selected randomly from the control group and dropped for easy statistical comparison. This gave an attrition rate of 27% which was good enough for the experimental study considering that Meyer et al., (2022) indicates that a response rate of 70% and above is acceptable. This was attributed to adherence counselling using 5 As Bardonian model provided to the participants prior to the study.

Table 1: Effects of aerobic exercises on neuroticism

Statement: How often in the previous 2 week you felt the following:	Type of Test	**% Experimental Group Responses**				**% Control Group Responses**			
		(0)	(1)	(2)	(3)	(0)	(1)	(2)	(3)
1. Often feel vulnerable or insecure	Pre-test	0.0	100.0	0.0	0.0	14.6	48.8	36.6	0.0
	Post-test	84.8	8.7	6.5	0.0	44.6	31.9	23.4	0.0
2. Get stressed easily	Pre-test	0.0	0.0	100.0	0.0	10.0	32.5	57.5	0.0
	Post-test	81.6	12.2	6.1	0.0	26.5	32.7	40.8	0.0
3. Struggle with difficult situations	Pre-test	0.0	95.9	4.1	0.0	17.1	36.6	46.3	0.0
	Post-test	79.6	8.2	12.2	0.0	30.6	30.6	38.8	0.0
4. Have mood swings	Pre-test	0.0	2.0	98.0	0.0	4.9	39.0	56.1	0.0
	Post-test	77.1	12.5	10.4	0.0	24.5	32.7	42.9	0.0
Average Pretest		0.0	49.5	50.5	0.0	11.7	39.2	49.1	0.0
Average Posttest		80.8	10.4	8.8	0.0	31.6	32.0	36.5	0.0
Variance		80.8	-39.1	-41.7	0.0	19.9	-7.3	-12.7	**0.0**

Scale: (0) = Not at all; (1) = Half a day; (2) = More than half a day; and (3) = Nearly every day

Source: Primary Data

The results in table 1 reveal that at the pre-test stage, all the experimental group participants reported experiencing some form of neuroticism. However, after the aerobic exercises, 80.8% of the experimental study participants reported having been relieved of the symptoms. This was against a variance of 19.9% in the case of the control group. These results suggest that the aerobic exercises were of a benefit to the participants by relieving the feelings that had reported about earlier.

The inferential results start with a paired-samples t-test was conducted and the outputs were as presented in the three Tables 2, 3 and 4

Table 2: Paired samples statistical results

Group to which subject belongs			**Mean**	**N**	**Std. Deviation**	**Std. Error Mean**
Experimental Group	Pair 1	Post-neuroticism	.78	45	.842	.126
		Pre-neuroticism	2.51	45	.037	.006

Control Group	Pair 1	Post-neuroticism	1.84	39	.929	.149
		Pre-neuroticism	2.29	39	.486	.078

Source: Primary Data, 2023

It was noted from the results displayed in Table 2 that the pre-test and post-test mean values differed from one another. The experimental group's mean post-test to pre-test difference was -1.73 (0.78 – 2.51), which is significantly higher than the control group's mean of -0.45 (1.84 – 2.29). It was also noted that the experimental group's standard deviation was larger than the control group's when comparing the two sets of data. This shows a significant improvement in the clients of the experimental group.

Table 3: Paired samples correlation

Group to which subject belongs			**N**	**Correlation**	**Sig.**
Experimental Group	Pair 1	Post-neuroticism & pre-neuroticism	45	-.051	.738
Control Group	Pair 1	Post-neuroticism & pre-neuroticism	39	-.093	.574

Source: Primary Data (2023)

Table 3 shows that there was no correlation between the neuroticism scores obtained in the experimental and control groups before and after the test. The pre-test and post-test results do not show a linear connection, according to this.

Table 4 presents the results of the calculation of sample means and indicates whether or not they are statistically significant. The sample means are shown to fall within the confidence ranges.

Table 4: Paired samples results

			Paired Differences							
						95% Confidence Interval of the Difference				
Group to which subject belongs			Mean difference	Std. Deviation	Std. Error Mean	Lower	Upper	T	df	[P value] Sig. (2-tailed)
Experimental Group	Pair 1	Post-neuroticism – pre-test neuroticism	-1.722	.845	.126	-1.976	-1.468	-13.675	44	<0.001
Control Group	Pair 1	Post-neuroticism – pre-test neuroticism	-.455	1.088	.174	-.808	-.102	-2.612	38	.013

Source: Primary Data, 2023

According to Table 4, the experimental group's computed mean was -1.722, and the difference's 95% confidence interval stretched from -1.976 to -1.468. This demonstrates that the computed mean does, in fact, fall inside the confidence interval. Given that the control group's computed mean was -0.455 and the interval included the range of -0.808 to -0.102, it fell inside the 95% confidence interval.

The null hypothesis, "Aerobic exercises have no significant effects on neuroticism of HIV positive clients on ART," is rejected in light of the experimental group's p-value in this instance being less than the alpha level (.05) since a 95% level of significance was taken into consideration in this test. These results imply that aerobic exercises have an effect of reducing neuroticism in HIV positive clients on ART.

Discussion and Conclusion

Both the descriptive and the paired-samples T-test results pointed out that the aerobic exercises were of a benefit to the participants by relieving the neuroticism feelings that they had reported about earlier before the exercises. The hypothesis test results concurred with the above results as it was established that the aerobic exercises statistically significant decrease neuroticism in the study participants. These results are comparable to those of Baldwin et al. (2016), who found a substantial statistical correlation between physical activity and enjoyment of exercise. Compared to less active participants, highly active individuals self-reported considerably higher extraversion and reduced neuroticism.

According to Weed and Kwon (2007), neuroticism is "a broad personality trait dimension representing the degree to which a person experiences the world as distressing, threatening, and unsafe." They go on to say that everyone can be found somewhere along this personality dimension, ranging from extremely chaotic to absolutely stable emotions. They claim that people with high levels of neuroticism are often unstable, tense, labile, and reclusive, whereas people with low levels of neuroticism are typically stable, self-assured, and under less stress. Being neurotic is linked to distress and a lack of happiness with oneself and life, even to the point of describing minor health issues as serious ones. They are also more prone to anxiety, depression, anger, and guilt.

According to the results of this study aerobics reduce neuroticism, it follows that they also reduce anxiety because Kotov et al., (2010) opine that neuroticism is strongly associated with anxiety. As a result, there will also likely be less psychopathology, guilt, psychological inflexibility, and emotion dysregulation, all of which could account for the correlation that Paulus et al. (2016) found between neuroticism and anxiety.

The present study's findings corroborate those of Hausenblas and Giacobbi (2004), who investigated the correlation between personality traits and primary symptoms of exercise dependence. Their findings indicated that extraversion, neuroticism, and agreeableness were predictive factors of exercise dependence symptoms.

Exercise improves cognitive functioning, mental health, and memory; it also hinders the development of certain neurological conditions. While exercising, oxygen saturation and angiogenesis (blood vessel growth) occur in areas of the brain associated with rational thinking and as well as social, physical and intellectual performance. Exercise drops stress hormones and increases the number of neurotransmitters like serotonin and norepinephrine, which are known to accelerate information processing. Exercise upregulates neurotrophins (brain-derived neurotrophic factor, insulin-like growth factor, and basic fibroblast growth factor). These support the survival and differentiation of neurons in the developing brain, dendritic branching, and synaptic machinery in the adult brain.

The result of this research, as well as the descriptive and paired-samples T-test, emphasizes the significant role aerobic exercise can play in reducing neuroticism among HIV patients. Through aerobic exercise on a regular basis, the subjects demonstrated significant reduction in being neurotic, which is accompanied by increased emotional stability and reduced anxiety and stress. This finding concurs with Baldwin et al. (2016), who obtained positive association between elevated physical activity and lower neuroticism, particularly among individuals with higher levels of physical activity. Such findings are emphasized as indicative of the therapeutic efficacy of exercise as an addition to existing HIV treatments as a method for improving mental and overall health status in individuals infected with HIV. Because neuroticism is a primary predictor of adverse mental health consequences, the addition of regular aerobic exercise to HIV treatment regimens has the potential to significantly enhance quality of life and decrease psychological distress.

Lastly the current study are consistent with the collective evidence linking neuroticism to a variety of psychological challenges, including anxiety and depression. As highlighted by Kotov et al. (2010), neuroticism has robust associations with heightened anxiety, and therefore it must be a priority area of interventions aimed at improving mental health. The results in the current study show that aerobic exercise not only reduces neuroticism but possibly can also alleviate anxiety as well as concomitant psychopathology such as guilt and emotional dysregulation, as suggested by Paulus et al. (2016). The physiological mechanisms by which these effects take place are supported by evidence of the neurobiological benefits of exercise, including increased oxygen saturation, increased levels of brain-derived neurotrophic factor (BDNF), and improved neurotransmitter function (Hausenblas & Giacobbi, 2004). These biological adjustments are required for cognitive and affective processing, suggesting that exercise can be critical in physical and mental management of HIV. Thus, the incorporation of exercise in HIV therapy may have a multi-faceted impact on patient outcomes, both physical and mental, in relation to surviving with the virus.

Conclusion

The findings indicate that the participants of the experimental investigation reported feeling less neurotic signs and symptoms overall. These findings imply that the participants benefited from the aerobic exercise by experiencing relief from the emotions they had previously expressed during pre-test. The results show that there is a significant difference in the mean difference between the pre-test and post-test between the experimental group and the control groups. This demonstrates a notable improvement in the experimental group's customers, suggesting that aerobic exercise has a major impact on the neuroticism of HIV positive clients receiving antiretroviral therapy.

"A broad personality trait dimension representing the degree to which an individual perceives the world as distressing, threatening, and unsafe," is what Weed and Kwon (2007) define as neuroticism. They go on to say that everyone can be found somewhere along this personality dimension, ranging from extremely chaotic to absolutely stable emotions. They claim that people with high levels of neuroticism are often unstable, tense, labile, and reclusive, whereas people with low levels of neuroticism are typically stable, self-assured, and under less stress. Being neurotic is linked to distress and a lack of happiness with oneself and life, even to the point of describing minor health issues as serious ones. They are also prone to anxiety, depression, anger, and guilt.

Therefore, this study recognized the significant contribution of aerobic exercise in reducing neuroticism and enhancing mental health of HIV patients. The results of both descriptive and paired-samples T-tests recognize aerobic exercises as being effective in the treatment of neuroticism feelings, with less anxiety, emotional instability, and stress. These findings are in line with current literature, such as Baldwin et al. (2016), which demonstrated a positive relationship between physical activity and reduced neuroticism. Furthermore, the neurobiological mechanisms underlying these gains, such as improved oxygenation, enhanced neurotrophins, and neurotransmitter functioning, speak to the fact that exercise is fundamental to cognitive and emotional process. This supports the conclusion that the inclusion of regular aerobic exercise in HIV treatment regimens can yield significant improvements in mental and physical health, reduce psychological distress, and enhance overall quality of life in individuals infected with HIV.

Patients Consent Statement

All participants completed an informed consent after a careful explanation of the study purpose, procedures and the potential risks. However, signing consent did not waive the participant's legal right they had freedom to withdraw their consent at any time they wished without any penalty.

Funding

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Conflict of interest

The authors hereby declare that there was no conflict of interest in conducting this study

Data availability

The data sets generated and analyzed during the study are available from the corresponding author on reasonable request.

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Perspectives of Parents of Faculty of Sports Sciences Students towards Sports for the Disabled

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Abstract

The individual is influenced by their environment; parents are the primary role models for them, followed by friends, family, and teachers. These individuals teach them the importance of sports, how it benefits disabled individuals, and how to have positive attitudes regarding disability. Using a qualitative, phenomenological approach, this study aimed to investigate parents of students studying sports sciences' opinions regarding sports for people with disabilities. Data were gathered through semi-structured interviews with 20 parents (9 female, 11 male). Educational backgrounds ranged from primary school (n = 4) and middle school (n = 4) to secondary school (n = 5) and university (n = 7). Only three participants reported having a disabled family member or close acquaintance. Interview transcripts were coded and thematically analyzed in NVivo 11. The majority of participants, according to the results, were aware of disabilities and the advantages—both social and physical—of sports for those with disabilities. Parents emphasized the importance of integrating disabled individuals into society and employing sports science graduates to support special needs. They also highlighted the success of ongoing projects but suggested the need for new, creative initiatives to reach a broader audience.

Keywords: Viewpoint, Impairment, Family, Sports for the disabled

Introduction

Each individual constituting society is composed of various physiological systems such as blood, muscles, and the skeletal structure, and these systems function in a state of harmonic collaboration. In addition to this, it is possible to talk about the existence of larger systems that sometimes directly and sometimes indirectly affect each other by adding some emotional and mental systems. Individuals adopt the motto of "active lives" in order for these systems to work more harmoniously and efficiently, and in this direction, they establish connections with various physical activities, exercises or, more broadly, sports. Therefore, thanks to this active life, individuals can benefit from many positive effects of sports activities such as weight control, brain health, reducing the risk of cardiovascular diseases and some types of cancer, strengthening muscles, overcoming type 2 diabetes (CDC, 2021; Warburton et al, 2006), overcoming problems such as social phobia and anxiety disorders (Jayakody et al., 2020), getting rid of the feeling of loneliness (Pels & Kleinert, 2016), personal development, social adaptation and change (Wankel & Berger, 1990), decreased stress or depression levels and higher quality sleep (Stubbs et al., 2018; Sallis et al., 2020), increased mental development or learning new things faster (Zhao et al., 2017, Gülünay & Savaş, 2022).

While it is relatively easy and nearly always possible to achieve these benefits under almost any condition for many individuals with typical development, the situation can be quite different for those who live with various disabilities due to certain developmental characteristics. According to the World Health Organization (WHO, 1995), everyone has the right to the highest standard of physical, mental and social well-being. In addition, the desire of these individuals to benefit from sports within the framework of the "active living" motto, both in terms of their special and typical needs, is just one of their educational rights. The Constitution of the Republic of Türkiye, Article 42 (1982), explicitly states that education is a right for everyone and that necessary measures will be taken to ensure that individuals with special educational needs can contribute to society. In this context, sports have a very important and valuable place among the opportunities offered to individuals with special needs. Sport is a biological, pedagogical and social phenomenon that improves the individual's health in a physiological and psychological context, shapes their social behavior, and brings them to a certain level in mental and motor terms (Demir & İlhan, 2020). In other words, with sports, disabled individuals can have higher self-esteem, better relationships with the environment and better mental health (İlhan, 2010), and a better mood and higher sense of self-efficacy with the decrease in anxiety and stress levels. In a declaration published by the United Nations on disabled people and sports (U.N., n.d.), it is stated that with sports, labeling of individuals due to their disabilities can be prevented by highlighting their skills rather than the person, and even attitudes towards these individuals can become more positive. Stangova et al. (2022) stated that as a result of their study with nine disabled individuals, these individuals talked about not only the improvement in their physical condition but also some mental and social improvements after they started sports. Rimmer and Rowland (2008) stated in their study that sport is an important element especially for young people with disabilities, and that it provides many benefits such as improving cardiovascular health, reducing the risk of obesity and better mental health outcomes, and that considering the positive results, participation in sports by these groups should be encouraged. Blauwet and Willick (2012) emphasize the physical, psychological and social benefits of the Paralympic Movement on disabled athletes, and mention that sport is also a wide-ranging tool that can be used for the rights and social integration of disabled individuals. Palmer and Harley (2012) stated that sports provide great benefits in improving the general health status of individuals with

disabilities and that sports participation has positive physical, social and psychological reflections.

In this process, it may be directly related to parents that individuals with special needs benefit from sports in a healthy and maximum way. While parents have a significant influence on this issue, they can act as both facilitators and hinderers of their athletic aspirations. It can be said that the behaviors of parents who have no connection with sports and who are unaware of the high importance of sports for individuals with special needs have a latent power that will directly affect their children in their social lives. Lack of support within the family or negative perception of disability may limit an individual's participation in sports by leading to decreased self-esteem and motivation, as stated by Shapiro and Martin (2010). Supportive families can provide not only emotional encouragement but also practical resources such as transportation, financial assistance, and information about adaptive sports options. Parents' perspectives on sports can provide profound benefits to children with disabilities by significantly shaping their overall development and quality of life. When parents see sports as a valuable and inclusive activity, they will be more likely to encourage participation. Groff, Lundberg, and Zabriskie (2009) show in their studies that parental support is crucial in developing a child's interest in sports, helping to increase the child's self-confidence, and encouraging a sense of competence and self-worth. Jaarsma et al. (2014) reported that families who demonstrate positive attitudes toward sports can greatly increase the likelihood of continued participation and success in athletic activities for individuals with disabilities. Additionally, Shields et al. (2016) emphasize that parental involvement in sports is a critical determinant of the participation levels of children and adolescents with disabilities. Therefore, the family environment serves as a fundamental element in determining the opportunities and challenges that individuals with disabilities face in the field of sports. Furthermore, parents who recognize the importance of sports often make efforts to access adaptive sports programs and resources. According to Shields et al.(2016), such an effort is necessary to break down barriers to participation and ensure that children with disabilities have opportunities to develop their skills, enjoy social participation, and experience the joy of competition and teamwork. Lauruschkus et al. (2017) emphasize that parental encouragement is closely linked to increased participation and social inclusion among children with disabilities, especially those with conditions such as cerebral palsy. This ongoing participation not only aids physical development, but also fosters resilience and self-efficacy, which are crucial to overcoming disability-related challenges. Similarly, research by Murphy and Carbone (2008) highlights the role of parents in creating a supportive environment that encourages both physical activity and social interaction, which are key components in the overall development of children with disabilities. Therefore, parents' perspectives and actions are crucial in creating an environment that supports a child's participation in sport, ultimately impacting their holistic development and long-term well-being.

Individuals' participation in sports and physical activities is related to how their parents view these pursuits. The biggest influence of the family on socialization is determining whether or not they will participate in sports activities and, if so, how they will participate (Turhal et al., 2022). If these children have a disability that requires special education, they can be on the benefiting side, if not, they can be on the opposite side with the role of a sports instructor who deals with this work and thus guides them to provide the benefit. Examples of research findings include that children whose families are active in sports behave similarly to their families (Lee, 2004), that the family's attitudes towards physical education and sports can be seen in children in a very similar way, and children from families with high attitudes are more likely to participate in sports activities (Suna & Özkan, 2022), and children can be positively

affected by sports becoming a part of the family's daily life and can be involved in sports in some way (Durmuş, 2020), and the family's attitudes and behaviors are very important in this regard. Except for attitudes or direction to sport, family environment is also important in choosing a profession. Atli and Gür (2019) in their study explained that in choosing the suitable profession the family as the decision maker is very important. Yavrutürk (2023) also mentioned in his study that when students try to choose a profession family affect is a factor needed to be evaluated. Korkut-Owen et al. (2012), in their study stated that for university students, even though family environment is not in the first place to decide about the suitable department for their future profession, it has high importance. Sav (2008) in her study explained that family environment is an indicator in career planning. In this context, as mentioned before, the employment of these people in such a field will be provided by various guidance, awareness and attitudes seen in the person's immediate environment, so the parental views on this subject form the basis of the study. It is of great importance for individuals with disabilities to benefit from the multi-dimensional advantages offered by sports, but all of this will be possible with individuals who have received sports training to guide them. When the related literature is examined, it is seen that there is no similar study to this, and the situation reflects its originality. Therefore, this research aims to examine the perspectives of parents of students studying at the Faculty of Sports Sciences towards sports for the disabled.

Material and Method

Ethics Committee Permission

The research was implemented after the ethics committee decision of Karabük University dated 29.03.2023 and numbered 2023/03 was obtained.

Research Design

In the study, qualitative research methods were used to examine the perspectives of parents of students studying at the Faculty of Sports Sciences on sports. In this context, phenomenological design was adopted within the scope of qualitative research in the study and the interview technique was chosen to collect the data. The phenomenological design is defined as the explanation of facts or events that are aware of but do not have an in-depth understanding (Yıldırım and Şimşek, 2016). It is also generally stated that it is an approach that allows for the evaluation of past or potential experiences (Jasper, 1994). In this context, the parents of students studying at the Faculty of Sports Sciences and taking at least one compulsory or elective course related to disabled sports were determined as the focal point. Interview techniques vary as structured, unstructured, semi-structured, ethnographic interviews and focus interviews depending on the availability of sources and the characteristics of the data to be reached (Büyüköztürk et al., 2014). In this study, a semi-structured interview technique was used.

Research Group

The research group consists of parents of students who are studying at Afyon Kocatepe University Faculty of Sports Sciences and were selected through purposive sampling method. Purposive sampling is a method that allows selecting information-rich cases for in-depth studies that address specific characteristics of the sample group. This method is applied in order to obtain richer data and increase the credibility of the research (Flick, 2014; Marshall & Rossman, 2014; Patton, 2014). These criterias are taken into account for forming the research group; parents of students who take sports or adapted physical education and sports lessons for the disabled, parents who follow the developments in their children's field, parents who take on the role of spectator in their children’s competitions.

Although the number of participants and minimum sample sizes are not specified in qualitative studies, qualitative data are generally collected until a certain level of data saturation is reached or no new data is received (Creswell, 2014). In this context, the opinions of a total of 20 parents, 9 females and 11 males, were obtained. Demographic information about the participants is given in Table 1. The participants are coded with the letter "P" (participant) as seen on the table.

Table 1. Demographic information of the participants

Variables	Level	n	%
Gender	Female (P1, P3, P7, P11, P12, P13, P17, P19, P20)	9	45.0
	Male (P2, P4, P5, P6, P8, P9, P10, P14, P15, P16, P18)	11	55.0
Educational Status	Primary school	4	20.0
	Middle school	4	20.0
	Secondary school	5	25.0
	University	7	35.0
Presence of a Disabled Person in the Family/Relative	Yes	3	15.0
	No	17	85.0
Type of disability if available	Mental disability	2	66.67
	Physical disability	1	33.33

Data Collection

In the study, "Semi-Structured Interview Questions", which were created by obtaining expert opinions, were used in order to predict the perspectives of the parents of students of the Faculty of Sports Sciences regarding sports for the disabled. Yıldırım and Şimşek (2018, pp. 137-145) made some suggestions for the preparation of interview questions and explained these suggestions with some special items. The first of these is that the questions to be created should be easily understandable by the participants. Open-ended questions are asked, directions are avoided while asking the questions and waiting for answers, more than one or independent multi-dimensional questions are not asked at the same time, alternative questions are created considering the characteristics of the participants and individual differences, different types of questions are created, questions are organized in a logical framework and questions can be developed.

In this study, these relevant suggestions were taken into consideration when creating questions. Thus, in order to obtain data from the research group, questions were developed as a result of expert opinions and the data collection tool took its final form. For expert opinions, competent scientists, one of whom continues his studies in the field of Educational Sciences and the other in the field of Sports Sciences, were consulted.

During the interviews, ethical principles such as "obtaining the consent of the participants, respecting their private lives, not harming them in any way, and not misleading them" must be taken into consideration (Yıldırım and Şimşek, 2016). In line with this information, after being informed about the research and receiving voluntary consent form approval, the interviews were recorded with a voice recorder and transferred to the computer as data with the listen, stop and write steps.

For the interviews, a previously prepared empty classroom in the Faculty of Sports Sciences and the Zoom program, which was for the participants who were out of town, were used and face-to-face and online interviews were based. Flexibility was tried to be provided for fluent conversation. In order to respect copyrights, participants were assured that their personal information would not be used in any way, and that nicknames or coding would be used

instead. Interviews with participants lasted an average of 37 minutes for each participant. The interviews continued until the data saturation point was reached.

Data Collection Tools

It is stated that the main data collection tool in phenomenological studies is interview (Yıldırım and Şimşek, 2016). In this study, the semi-structured interview technique was taken into consideration. Semi-structured interview is the preparation of questions in a way that is as understandable as possible with preliminary preparation and the editing of questions to the participant in case the questions are not understood during the interview or in case of pending situations (Karasar, 2015; Polat, 2022).

The questions asked to parents in the interviews are given below;

1. What is disability for you? How do you define the concept of disability?

2. What are the types of disabilities?

3. What are the contributions of sports activities to the development of disabled individuals? What do you think about this?

4. If you had a disabled child or a relative, would you consider directing them to sports? Why?

5. Would you like your child or a relative to work with disabled individuals?

6. What are your views and suggestions regarding the field of education and employment for disabled people in the field of sports?

Data Analysis

In the analysis of the data, descriptive analysis method was used to address the perspectives of parents on sports for the disabled. Content analysis is considered an in-depth analysis technique with coding based on certain rules. This technique aims to reveal previously unknown themes, analyze and interpret the obtained data (Koca, 2017).

The reliability formula developed by Miles and Huberman (1994) was taken into account in the reliability calculation of the data. The formula in question is Reliability = Consensus / (Consensus + Disagreement). According to the formulation, the reliability of the study was recorded as 84%. The data obtained were coded by taking the opinions of 2 experts and analyzed with the Nvivo 11 Software.

In order to ensure the validity and reliability of the findings, a member check was conducted with 7 randomly selected participants from the study group. In line with the feedback from the participants, the categories were reviewed, and necessary corrections were made.

Ethical Approval

The necessary ethics committee permissions were obtained at the meeting of Karabük University Social and Human Research Ethics Committee dated 29.03.2023 and numbered 2023/03.

Findings

In line with the research objectives, the perspectives of the parents of students studying at the faculty of sports sciences towards sports for the disabled were examined and the findings are given below.

1. Participants' views on how they define disability

Participants were asked the question, “What is disability for you? How do you define the concept of disability” The answers to this question are given in the model below (Figure 1).

Figure 1. Themes created for the first question

According to Figure 1, differences were seen in the answers. 10 of the participants' answers were gathered under the theme of "physical disability", 9 under the theme of "mental limitation", 4 under the theme of "obstacles in daily life", 2 under the theme of "emotional deficiency" and 1 under the theme of "disease".

In this context, some of the answers given by the participants regarding the first question are as follows:

Participant 1: These are disruptions in every aspect of an individual's life due to physical or mental disabilities.

Participant 6: It is a limitation of movement and lack of decision-making ability. It is not only physical, but also mental, and sometimes even an emotional disability.

2. Participants' ideas about what types of disabilities there are

Participants were asked the question, “What are the types of disabilities?” The answers to this question are given in the model below (Figure 2).

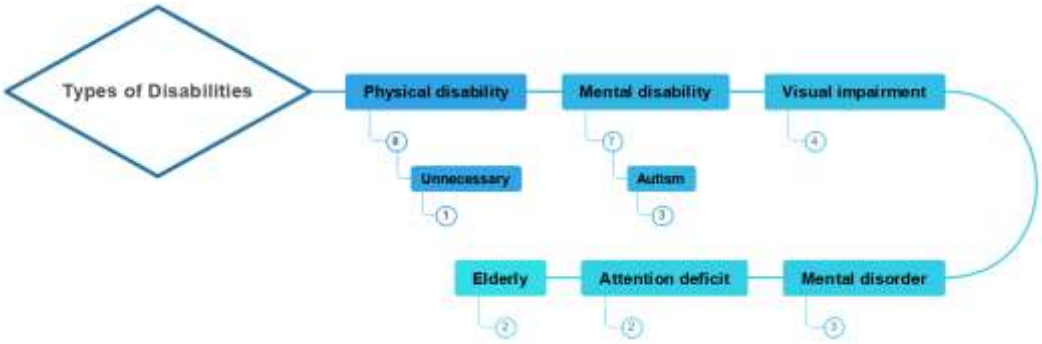

Figure 2. Themes and subthemes created for the second question

According to Figure 2, differences were determined in the answers to this question. 8 of the participants' answers were gathered under the theme of "physical disability", 7 under the theme of "mental disability", 4 under the theme of "visual impairment ", 3 under the theme of "mental disorder", 2 under the theme of "attention deficit" and 2 under the theme of "elderly", 1 under the theme of "unnecessary" and 3 under the sub-theme of "autism".

Some of the answers regarding the second question are as follows:

Participant 9: Mentally disabled, visually impaired, those with mental and emotional illnesses, those with attention deficit. They all have needs.

Participant 17: Types of disabilities are divided into three categories: physical, intellectual, and psychological. Individuals who are unable to perform certain vital functions to maintain

their own lives require special needs, but this does not mean that all people with disabilities require special needs.

3. Participants' ideas about the contributions of sports activities to the development of the disabled

Participants were asked the question, "What are the contributions of sports activities to the development of disabled individuals? What do you think about this?" The answers to this question are given in the model below (Figure 3).

Figure 3. Themes created for the third question

According to Figure 3, differences were determined in the answers. 7 of the participants' answers were gathered under the theme of "healthy life", 6 "socialization", 5 "self-confidence", 3 "happiness", 3 "stress management and relaxation", 3 "motivation", 2 "success" and 1 "fun".

Some of the answers given by the participants regarding the third question are as follows:

Participant 2: It gives them confidence. They understand that they should not be deprived of activities because of their disabilities. As they are able to do things, they become more accepting of their disabilities, and it helps them not to dwell on it too much.

Participant 6: It increases their self-confidence and enables them to establish a social environment so that they can play a happier and more active role in life.

Participant 13: It contributes to positive development. It enables the individual to be more social, more harmonious and healthier.

4. Participants' ideas about directing a disabled child or relative to sports

Participants were asked the question, "If you had a disabled child or relative, would you consider directing him/her to sports? Why?" The answers to this question are given in the model below (Figure 4).

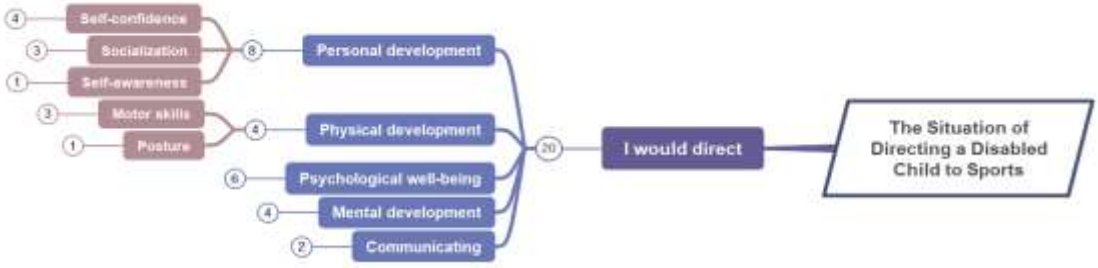

Figure 4. Model, themes and subthemes created for the fourth question

According to Figure 4, differences were determined in the answers. All participants gave answers related to directing a disabled child to sports. In this context, 8 of the answers given were gathered under the themes of “personal development”, 4 under “physical development”,

6 under “psychological well-being”, 4 under “mental development” and 2 under “communication”, 4 under the sub-themes of “self-confidence”, 3 under “socialization”, 1 under “self-awareness”, 3 under “motor skills” and 1 under “posture”.

Some of the answers given by the participants regarding the fourth question are as follows:

Participant 1: Yes, because it contributes spiritually, physically and socially.

Participant 4: I would definitely direct them. Just like every person, a disabled individual should also have physical activities. Engaging in physical activities is very beneficial for both the body and mental health.

Participant 20: I would definitely direct them. This situation is a great need both for embracing the disability and overcoming it. With the work of the mind and body, sports provide not only muscle development but also mental development and relaxation. In addition, pushing the boundaries drawn under the name of disability can be promising in terms of saving the person from this situation. Even small successes achieved can restore self-confidence and make it easier to hold on to life. Physical development can be beneficial for the disabled to take many steps to make their lives easier and to do their daily work.

5. Participants' opinions on the idea of your child/relative working with disabled individuals after graduating from university

Participants were asked the question, “Would you like your child or a relative to work with disabled individuals?” The answers to this question are given in the model below with the number of people (Figure5).

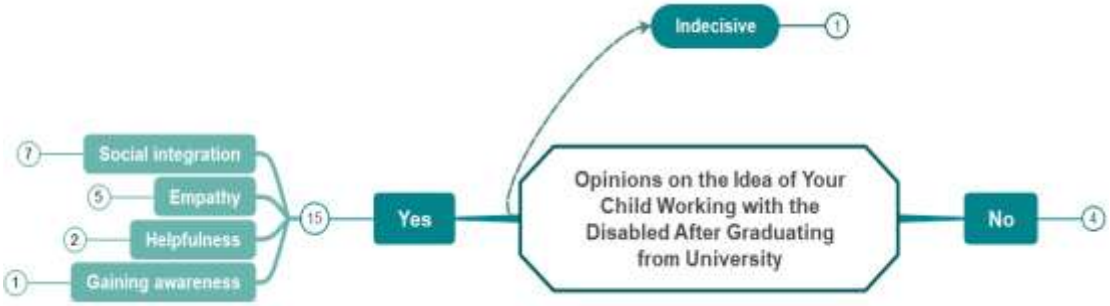

Figure 5. Model and themes created for the fifth question

According to Figure 5, differences were determined in the answers. 15 of the participants' answers were "yes", 4 were "no", and 1 was “indecisive". Of the participants who answered yes, 7 of their opinions were gathered under the themes of "social integration", 5 were "empathy", 2 were "helpfulness", and 1 was "gaining awareness".

Some of the answers given by the participants regarding the fifth question are as follows:

Participant 3: Yes, I would like that. It teaches them how to empathize, guides them, helps others, and both sides grow and develop.

Participant 16: Maybe, they also need to be integrated into society.

Participant 20: I would like that because helping them is a source of pride for the person. Just as society should support one another in all aspects, it is important to show kindness and understanding towards special needs and disabled children.

6. Participants' opinions and suggestions regarding the field of education and employment for the disabled in the field of sports

Participants were asked the question “What are your views and suggestions regarding the field of education and employment for the disabled in the field of sports?” The answers to this question are given in the following model with the number of people (Figure 6).

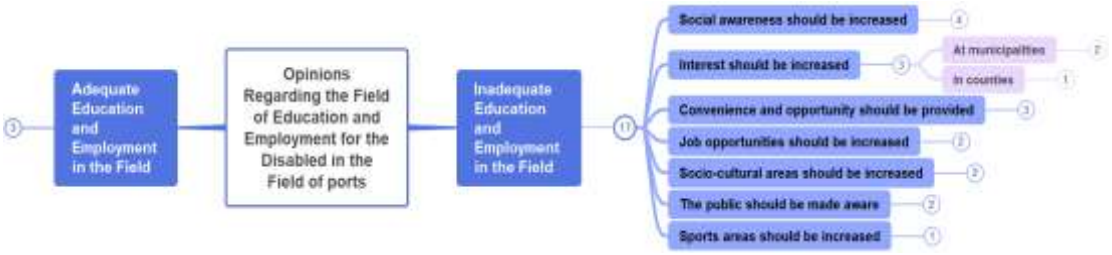

Figure 6. Model, themes and subthemes created for the sixth question

According to Figure 6, differences were determined in the answers. 3 of the participants' answers were under the theme of " Adequate education and employment in the field", 17 of them were under " Inadequate education and employment in the field". Within the scope of the opinion " Inadequate education and employment in the field ", 4 of the participants' answers were gathered under the themes "social awareness should be increased", 3 of them "interest should be increased", 3 of them " Convenience and opportunity should be provided ", 2 of them "job opportunities should be increased", 2 of them "socio-cultural areas should be increased", 2 of them " The public should be made aware " and 1 of them "sports areas should be increased", 2 of them "interest at municipalities should be increased" and 1 of them "interest in counties should be increased".

Some of the answers given by the participants regarding the sixth question are as follows:

Participant 4: Plans and programs for sports activities should be increased in places where they take place.

Participant 7: They should have more opportunities. Even though there are many sports areas, I find it insufficient to focus on and talk about this issue. It is also insufficient in terms of employment and should definitely be improved.

Participant 8: More socio-cultural areas should be created. I think that everyone should have easy access to these opportunities regardless of socio-economic level.

Discussion and Conclusion

The aim of the study was to examine the perspectives of parents of students studying at the Faculty of Sports Sciences on sports for the disabled, and the data obtained were discussed with various literature data.

When participants’ answers to the question about defining disability were examined, it is seen that the majority of the participants interpret disability as a limitation of the individual physically and mentally, while others approach it in different ways. According to the US Centers for Disease Control and Prevention (2020), disability is any physical or mental limitation that makes it difficult for an individual to undertake certain tasks and interact with their environment. According to the World Health Organization (WHO, 2001), disability is defined as a mental or physical impairment, such as loss of limbs, loss of vision, loss of memory, activity restriction, such as difficulty in seeing, hearing, or running, as well as a restriction on participation in work, social, or recreational activities. According to the Law on People with Disabilities (2005), a person with a disability is defined as someone affected by attitudes and environmental conditions that prevent their full participation in society on an equal basis with others due to varying degrees of loss in their physical, mental, psychological,

or sensory capacities; according to the Turkish Foundation for the Support and Education of People with Disabilities (n.d.), a person with a disability is someone who, due to various prenatal or postnatal conditions, experiences some functional losses in their psychological, physical, mental, or emotional capacities and faces challenges in adapting to society and meeting basic needs. When the definitions made are compared with the participant responses, it is seen that the keywords match to a large extent and that they are aware of this context.

When the answers given to the question about the types of disabilities were examined, it was noted that the majority were knowledgeable about the types of disabilities, while a small portion were unaware of the subject. The Australian National University (n.d.) categorizes types of disabilities as visual impairments, autism spectrum disorders, hearing impairments, intellectual disabilities, and physical disabilities. Similarly, the United Nations Secretary for the Convention on the Rights of Persons with Disabilities (2007) reports these categories generally as physical, mental, intellectual, or sensory disabilities. Additionally, the Department of Empowerment of Persons with Disabilities, Ministry of Social Justice and Empowerment, India (2017) classifies disabilities into primary categories of physical, mental, and those caused by various conditions. In this context, comparing the participants' responses reveals that the majority are aware of the types of disabilities. This suggests that increasing and expanding awareness efforts about disabilities to reach individuals of all ages could play a role in further improving this awareness rate.

Participants' answers for the question about the benefits of sports for the disabled were examined, all participants have been seen to have a positive approach in terms of benefits, and the majority talk about cognitive and social gains. And also, the participants were asked the question, "If you had a disabled child or relative, would you direct them to sports?", all participants answered yes. According to Figure 4, differences were determined in the answers. All participants gave answers related to directing a disabled child to sports. This question was also answered similarly on the basis of physical and social development, and a small portion also touched on mental development. When the studies are examined, sports can help people with disabilities learn important social skills, gain independence, communicate and cooperate effectively, respect others, and strengthen them physically and mentally and increase their independence (United Nations, 2020). Kızar et al., (2015) reported that sports contribute to social adaptation and psychological well-being, reducing loneliness levels. Vanderstraeten and Oomen (2010) reported that sports provide physical benefits, minimize the diseases that disabled individuals may encounter due to sedentary living conditions, create a state of psychological well-being, and contribute to disabled individuals' high self-confidence by providing social benefits. In their study, Darcy and Dowse (2013) concluded that participation in sports provides significant social benefits for individuals with disabilities, particularly in terms of fostering a sense of belonging and building friendships. In his study with parents of children with disabilities, İlhan (2009) reported that the parents emphasized that physical education and sports should be an integral part of special education and these activities provide various benefits for their children. Güngör, Yılmaz and İlhan (2019) stated that sports provide physical, psychological and social benefits to individuals with special needs, thus improving their quality of life. Considering the study results, it is seen that sports provide multifaceted benefits to disabled individuals, and parental opinions are also on the same denominator with these results.

When parents were asked whether they wanted their children or relatives to work with disabled individuals, most of the participants answered "yes". In communities where family structure and opinions have important tendencies in career planning like in Türkiye, family perspectives are seen as important as individuals' own opinions. When the literature is

reviewed, families have a significant role in shaping their children's future. In other words, the participants may have a say in their children's choices. Erme (2014) in his study, concluded that family factors are decisive in the career choices of individuals. Hariko and Anggriana (2019) stated that parents play a significant role to support for the development of their career. Pascariati and Ali (2022) also indicates that family has effects on decisions of their children's future plans. Even though individuals experience some directions in the family, they still have their own ideas and these ideas may be in the same way with these directions or not. These ideas may relate to their educational status. Stewart (1990) argued in his study with students who took adapted physical education courses that students developed positive attitudes towards working with disabled individuals. Similarly, in their study with preservice physical education teachers, Özer and Süngü (2016) stated that the attitudes of students towards sports in the disabled increased positively as a result of the practices carried out by the students who took the "Physical Education and Sports Course for the Disabled". Sniatecki, Perry, and Snell (2015) reported in their study examining faculty attitudes toward students with disabilities that the majority of faculty members exhibited positive attitudes and they were also highly interested in professional development opportunities such as what to do/not to do with disabilities, assistance in the classroom, assistance with accommodations, and selection of best practices for specific disability groups in order to work more effectively with students with disabilities. In their study with undergraduate students, Hergenrather and Rhodes (2007) observed that participants' attitudes towards individuals with disabilities varied depending on social contexts such as work life, marriage, and dating. The participants expressed comfort in socializing with a colleague with a disability in the workplace and indicated that they would marry a loved one even if that person had a disability. All in all, these studies highlight that people who grow up in a family where they experience positive directions and who are equipped with knowledge about individuals with disabilities, may have positive tendencies to work with the disabled.

Finally, the answers to the question about education or employment opportunities in sports for individuals with disabilities were examined. In this regard, the Ministry of Family and Social Services organizes various workshops, seminars and projects within the framework of the Optional Protocol to the Convention on the Rights of People with Disabilities (Ministry of Family and Social Services, n.d.), and local governments also make some arrangements for the participation of individuals with disabilities in social life (Emini & Ayaz, 2019). Sørensen and Kahrs (2006) stated that sport governing bodies are increasingly encouraging the inclusion of people with disabilities in sports, and Kitchin and Howe (2014) suggested that incentives should be provided for greater involvement of people with disabilities in such activities rather than just disability-specific sports organizations. Harada and Siperstein (2009) argued that public awareness campaigns should be organized to inform community members about the contributions of sports to individuals with disabilities. Block and Obrusnikova (2007) stated that more investments should be made to enable disabled individuals to better benefit from sports facilities. As a result of their study, Fitzgerald and Stride (2012) stated that in order for disabled individuals to benefit more from sports, employing candidates who have received training in this field is essential for a successful process. Shapiro and Malone (2016) also advocated the employment of specialized staff and reported that training in sports for the disabled would also increase success in terms of safety and effective guidance. Martin (2013); Rimmer, Wang and Smith (2008) emphasize that in order for disabled individuals to benefit maximum from sports, sports educators must work with high disability awareness and be open to new methods and practices. While the study results are similar to each other, it is seen that the issue of sports education and employment

for sport for the disabled is open to development and more importance should be given to this area.

In conclusion, when participants' perspectives towards sports for people with disabilities were evaluated, the vast majority were aware of the concept and types of disability. Many also identified numerous physical and social benefits of sport for disabled individuals. Participants expressed support for their children or relatives working with disabled people and agreed that employment in this field should be increased. They recognized the general benefits of active living and its positive effects on people with disabilities, and although they felt current initiatives and awareness-raising events were useful, they believed such efforts should be expanded to reach wider audiences. Complementing these findings, contemporary research underscores a biopsychosocial view of disability that situates functional limitations in a dynamic interplay with environmental barriers (WHO, 2001). Systematic reviews show that well-structured physical-activity programmes produce meaningful gains in self-efficacy, social participation and mood among people with disabilities (Shields et al., 2012; Jaarsma et al., 2014b). Autonomy-supportive contexts further enhance adherence (Ryan & Deci, 2000), and service-learning that brings sport-science students into sustained contact with disabled athletes increases their likelihood of pursuing inclusive coaching careers (Case et al., 2020). These converging lines of evidence validate participants' calls for expanded awareness initiatives, targeted professional training and dedicated employment pathways to translate positive parental attitudes into accessible, sustainable sport opportunities for all.

When evaluating the research results, it is suggested that the study be applied to a broader sample group, comparisons be made with parents of university students from different regions, and various socio-cultural factors such as place of residence and income level be included in the study to gain a deeper understanding of the background of parents' opinions. In addition, for families with lower awareness of disabled individuals, their attention can be drawn to this issue by organizing various conferences, trainings and events through various collaborations between local governments and non-governmental organizations. Virtual reality simulations, inviting famous disabled athletes to events to raise awareness, and social awareness activities where disabled and non-disabled individuals can do sports together, such as wheelchair basketball, can be suggested to help people understand the difficulties experienced by disabled individuals.

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The Development of Sports and Politics Publications Over Time

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Abstract

This study was conducted to examine the development of publications titled Sport and Politics over time. In the advanced search section of the Web of Science database, The bibliometric analysis of 1,529 publications was analyzed with various parameters such as "country", "annual scientific production", "average citation", "frequency of words over time". The data obtained were processed through Bibliometrix R and VOSviewer software program. The thematic evolution map shows that the words sport, foreign, government, policy from. The year 1972 was chosen as the starting point of the study, as it corresponds to the earliest publications on sport and politics indexed in the Web of Science database. 1972-2015 are related to the words policy, sport, international, leisure, sporting, football, events from 2016-2024. This shows that sport has become much broader and multifaceted in the fields of politics, culture, economy, social life and international relations. In this field, it has been suggested to examine in more depth elements such as sport policy, international sport events, economic effects of sport, social equality, cultural role of sport, commercial dimensions of the sport industry.

Keywords: Bibliometric, Policy, Sport.

Introduction

Sport is one of the important factors affecting the health, moral structure, labor force and production continuity of individuals and thus society in a country; it also provides a great economy in health expenditures by functioning as preventive medicine and therefore it is emphasized that it should be among the basic policies of the state. A classification is used that examines three levels: individual athletes and their immediate environment, sports policies and politics, and the social and cultural environment people live in. These levels are closely related to each other, interact with each other, and cannot be separated from the social and cultural dimensions; therefore, they are affected by the social and cultural structure in the country (De Bosscher et al., 2006; Sunay, 2024). Sport is one of the important factors affecting the health, moral structure, labor force and production continuity of individuals and thus society in a country; it also provides a great economy in health expenditures by functioning as preventive medicine and therefore it is emphasized that it should be among the basic policies of the state (Bilgin, 1990). Sports and regular exercise are becoming increasingly important today in order to maintain a healthy life and expand the living space (Ahraz et al., 2021). Sport is recognized as one of the influential factors in the world in terms of health, culture, and bringing individuals together on a social level. The spread of modern sport has made it a phenomenon that attracts the attention of people worldwide (Tezcan, 1992, as cited in Alaeddinoğlu, 2024). Therefore, sport is an activity that involves physical and mental competition within the framework of rules, is a competitive activity by branch, and enables individuals to reach a high level of performance by ensuring the progress of technical and tactical development as well as physical, physiological, mental and psychological elements (Yılmaz, 2023a; Yılmaz, 2023b). Policy is a set of principles that guide managers in decision-making processes, a long-term plan, and a specific path or course of action chosen from among various alternatives in order to shape current and future decisions (Şentuna, 2009). When it comes to sports policy, what comes to mind is “the handling of sports, its principles and goals, the ways and methods to achieve these goals, infrastructure, facilities, tools and equipment, education and training approach, the perspective on sports at national and international levels, the philosophy of organization and implementation of sports” (Ekici, 2002). The goals of sports policies can be defined as raising individual elite athletes who sometimes achieve sensational successes, ensuring that certain clubs in the sports system maintain their current hegemonic position through privileged practices such as tax amnesty and land allocation, and creating a “hygienic” viewing environment for those who can afford to pay by ensuring the security of the “sports market” (Akın, 2005). At this point, the aims of sports policies in Turkey can be determined as the organization and strengthening of national sports and directing the development of athletes (Gök and Sunay, 2010). The relationship between sport and politics is a topical and important area that has gained more and more importance in recent years both in the academic field and in practice. It is understood that sport is not only a means of entertainment but also has a significant impact on social, economic and political spheres. The aim of this study is to analyze the interaction between sport and politics and to examine the development of this field in the literature. At a time when the role of sport in global politics is increasing and has become central to shaping social policies, this study aims to identify the most important research dynamics and trends in the field. Moreover, the keywords, co-authorship networks and citation data in the study emphasize the need to examine the relationship between sport and politics from a much broader perspective. In this context, the main problem of the research is to reveal how the interaction between sport and politics is shaped at the global level and how this relationship evolves in social, economic and cultural contexts. Filling this gap in the literature provides an important reference point for future research. Although the relationship between sport and

politics has attracted more attention, especially in recent years, academic studies in this field are still limited. Most of the existing research offers only a superficial perspective without examining the political implications of sport in depth. This study aims to fill the gap in the literature in this field. Most of the existing research offers only a superficial perspective without examining the political implications of sport in depth. This study aims to fill the gap in the literature in this field. Compared to the study of Cansun and Arık (2019) and Moradi et al., (2023) the originality of this study stands out in that it addresses the global relationship between sports policy and politics from a broader perspective. While Cansun and Arık (2019)'s bibliometric review of political science publications with a focus on Turkey deals only with Turkish political science literature, this study offers a different perspective by examining the global literature in the field of sports policy and politics. Moreover, while Cansun and Arık (2019) did not conduct an analysis based on the Web of Science (WoS) database, this study was conducted with data obtained from the Web of Science (WoS) database. This is another important factor that increases the originality and scope of our study. In addition, the study by Moradi et al., (2023) presents a bibliometric analysis of 458 articles published in IJSPP. The study was conducted using the Scopus database and focused only on articles published in the journal. In contrast, this paper conducts a broader analysis using the WoS database to provide a more comprehensive coverage of different aspects and global trends in sports policy and politics. In addition, while conducting important analyses such as keywords, inter-author collaboration, citation dynamics, this study increased the depth of these analyses by considering a larger number of data. Compared to the related literature, this study makes a unique contribution. While previous studies have provided some important data on general trends in the field of sport and politics, such as those by Cansun and Arık (2019), which analyzed political science publications in Turkey, and Moradi et al. (2023), who focused on the International Journal of Sport Policy and Politics (IJSPP), the originality of this study is that it examines the development of sport and politics in depth through bibliometric analysis over a wide time period. Moreover, while studies in the literature concentrate on specific geographical regions (e.g., Cansun and Arık, 2019; Moradi et al., 2023), this study provides a global perspective, highlighting the increasing production in different countries and the growing attention that sport is receiving at the political level.

Material and Method

Ethics Committee Permission

The data obtained within the scope of the study titled "The Development of Sports and Politics Publications Over Time" were taken from the Web of Science (WoS) database and since the data within this scope does not require ethics committee approval, ethics committee approval was not obtained. "During the current research, the "Higher Education Institutions Scientific Research and Publication Ethics Directive" was followed. All rules specified to be followed within the scope of the "Higher Education Institutions Scientific Research and Publication Ethics Directive" were complied with. None of the actions specified under the second section of the directive, "Actions Contrary to Scientific Research and Publication Ethics", were carried out. The implementation of the research does not require ethics committee approval."

Research Model

In this study, a bibliometric analysis method based on quantitative research and scientific mapping techniques was used. Bibliometric analysis is a method that examines and evaluates the existing literature in a particular research field and explores relationships between publications using algebraic and statistical methods through written and visual tools.

According to Pritchard (1969), bibliometric analysis is a subfield of library and information science that quantitatively summarizes bibliographic content (as cited in Çaylak and Özbey, 2023). Merigó and Yang (2017) define bibliometric research as a tool that presents an overall picture of the literature. Similarly, Okuba (1997) emphasized the importance of bibliometrics in identifying the current status of a field and tracking its evolution over time.

Data Collection

A total of 1,529 publications related to the field of *sport and politics* were identified using an advanced title search in the Web of Science (WoS) database with the query: (TI=(Sport*) AND TI=(Politics* or policy*))

- Inclusion Criteria: Publications explicitly containing "sport" and "politics/policy" in the title. The first relevant study was published in 1972.
- Time Interval: 1972–2024
- Database Used: Web of Science Core Collection
- Inclusion Criteria: Publications explicitly containing "sport" and "politics/policy" in the title
- Exclusion Criteria: Non-English publications and those not focused on sport-policy intersections were excluded.

Data Analysis Tools: The collected data were analyzed using the following tools:

- Bibliometrix R package,
- VOSviewer
- Sankey Diagram (for visualizing thematic evolution and country collaboration)

Analysis Parameters: The bibliometric analysis focused on the following parameters:

- Annual scientific Production
- Average citation per year
- Keyword frequency over time
- Country-level collaboration
- Co-authorship networks
- Thematic evolution of Keywords
- Source and reference analysis
- WoS index and category distribution
- Language of publications
- Citation analysis

Research Questions (Grouped by Focus Area)

- The study sought to answer the following guiding questions to uncover the profile of sport and politics research:

General Output and Impact

- What is the annual distribution of publications?

- What are the average annual citation counts?

Collaboration and Authorship

- Which countries are the most active in co-authorship?
- Who are the leading corresponding authors?
- What are the collaboration patterns between countries?

Content and Trends

- What are the trending topics and keywords?
- How has the thematic structure evolved over time?
- How has keyword frequency changed across decades?

Source and Reference Analysis

How are publications distributed by:

- Source production over time?
- Reference spectroscopy?
- WoS indexes?
- WoS categories?
- Language of publication?

Citation Analysis

- Author citations
- Document citations
- Countries citations
- Organizations citations
- Sources citations

Findings

In this section, the findings obtained regarding the publications titled sports and politics are presented.

Findings regarding main ınformation

Figure 1 presents the findings obtained regarding the main information.

Figure 1. Main information

In Figure 1, it was found that the publications on sports and politics were published between 1972 and 2024 with 660 sources, 1529 documents, 2098 authors, 1864 author keywords and 42970 references.

Findings regarding annual scientific production

Figure 2 presents the findings on annual scientific production.

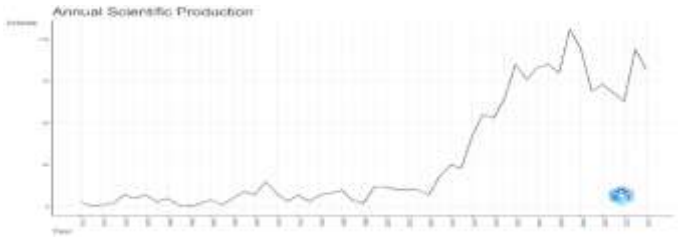

Figure 2. Annual scientific production

Figure 2 shows that the highest number of publications on sports and politics were published in 2017 (n: 106), 2018 (n: 94), 2023 (n: 94), 2012 (n: 85), 2015 (n: 85), 2014 (n: 83), 2024 (n: 82), 2016 (n: 80), 2013 (n: 76), 2020 (n: 73).

The data clearly shows a gradual increase in the number of publications related to sport and politics from 1972 to 2024, reflecting the growing academic interest in the intersection of these two fields. In the initial years (1972-1980), the number of publications was quite low, with some years having no publications at all (1973, 1982). This limited production can be attributed to the fact that the academic field of sport and politics was still in its early stages and had not yet gained widespread attention. However, starting from the mid-1980s and into the 1990s, there was a noticeable increase in the number of articles. Years such as 1990, 1995, and 1999 saw a rise in the number of publications, indicating that the research community was beginning to explore the relationship between sport and politics more actively. By the early 2000s, there was a more consistent increase, with yearly production rising to 10-12 articles per year, suggesting a growing recognition of the importance of sport in political and social contexts. The most significant surge in publications began in the 2010s, with a substantial rise from 53 articles in 2010 to 106 articles in 2017. This increase highlights a period of rapid growth in interest, particularly in how sport interacts with social, political, and economic policies. The consistent high numbers in the 2010s and 2020s, even reaching 94 publications in 2023, demonstrate the increasing academic focus on sports as a multifaceted phenomenon that influences, and is influenced by, political environments. This surge in publications, especially from 2010 onwards, likely correlates with the broader globalization of sport and its increasing role in international politics, economics, and cultural exchange. Events like the Olympic Games, FIFA World Cup, and political movements surrounding sport may have contributed to this growing body of literature. Additionally, the rise of social media and digital platforms has likely sparked new debates about sport's political influence, further expanding the scope of research. In summary, the steady increase in scientific production since 2000 reflects the growing importance of sport in political discourse and the recognition of its complex relationship with political, social, and economic issues worldwide. The spike in publications in the last two decades shows that sport is not just viewed as a form of entertainment but as an important field of study with political implications.

Findings regarding average citations per year

Figure 3 presents the findings on average citations per year.

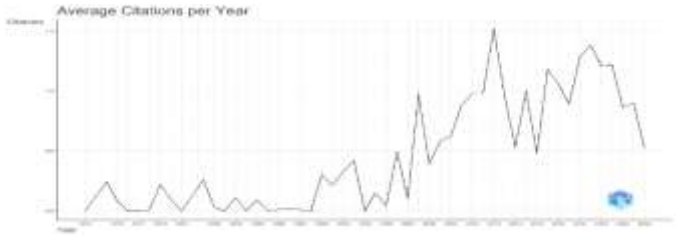

Figure 3. Average citations per year

In Figure 3, it was found that the annual average citations of publications titled sports and politics were received the most in 2010 (MeanTCperYear: 1.52), 2019 (MeanTCperYear: 1.38), 2018 (MeanTCperYear: 1.28), 2021 (MeanTCperYear: 1.22), 2020 (MeanTCperYear: 1.21), 2015 (MeanTCperYear: 1.18), 2016 (MeanTCperYear: 1.06), 2013 (MeanTCperYear: 1.00), 2008 (MeanTCperYear: 0.98), 2009 (MeanTCperYear: 0.98). These years, especially 2010, 2019, and 2018, stand out for their high citation rates, indicating a peak in academic interest and recognition for research at the intersection of sports and politics. However, it is important to note that the absence of high citation rates in earlier years, particularly from 1972 to 2009, could be attributed to the fact that publications on sport and politics were scarce during these years. In fact, many years within this period show minimal or no citations at all. This is likely due to the relatively nascent state of research in this area and the limited availability of studies exploring the relationship between sport and politics during these years. From the data, it is also observed that a significant portion of research in this field started to emerge more prominently starting in the early 2000s, leading to a gradual increase in citations in the subsequent years. The lack of publications during the early years of the study (1972-2009) might be linked to the growing global interest in interdisciplinary research starting from the late 1990s and the expansion of the understanding of sport as a social and political phenomenon. As there were no relevant publications available for inclusion in the Web of Science index between 1972 and 2009, this gap may indicate a relatively slower development of the field during this period. This is consistent with the general academic development trends where interdisciplinary fields, particularly the study of the relationship between sport and politics, gain momentum as societal and global contexts evolve.

Findings regarding the countries of co-authors

Figure 4 presents the findings for the countries of the co-authors.

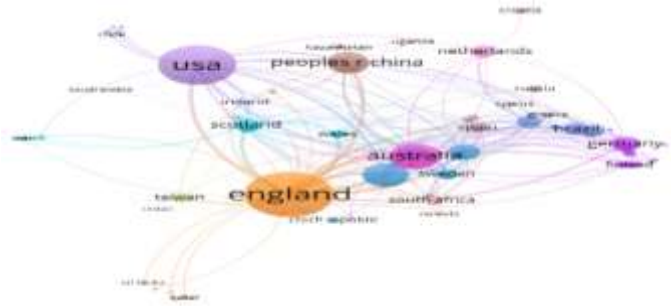

Figure 4. Co-Authors' countries

When Figure 4 is analyzed, it can be seen that the publications titled sport and politics are found in items: 65, cluster: 14, links: 219, total link strength: 457. Therefore, it was found that the countries of the co-authors were mostly England (n: 313), USA (n: 248), Australia (n: 118), Canada (n: 99), Peoples R China (n: 86), New Zealand (n: 52), Norway (n: 51), Germany (n: 46), Scotland (n: 39), Brazil (n: 38).

Corresponding author's countries

Figure 5 presents the findings for the countries of the corresponding authors.

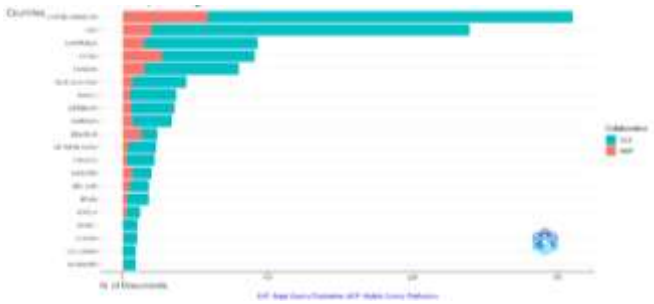

Figure 5. Corresponding author's countries

When Figure 5 is analyzed, it is seen that the countries of the responsible authors who published the most on the topic of sport and politics are United Kingdom (n: 310), USA (n: 239), Australia (n: 93), China (n: 91), Canada (n: 80), New Zealand (n: 44), Brazil (n: 37), Germany (n: 36), Norway (n: 34), Belgium (n: 24).

Countries' collaboration world map

Figure 6 presents the findings regarding the cooperation of countries.

Figure 6. Countries collaboration world map

When Figure 6 is analyzed, it is seen that United Kingdom-China (n: 20), United Kingdom-Australia (n: 17), United Kingdom-Canada (n: 15), United Kingdom-Norway (n: 15), United Kingdom-Usa (n: 15). Canada-Australia (n: 12), Usa-Canada (n: 10), United Kingdom-Belgium (n: 8), Usa-Australia (n: 8), Usa-China (n: 8).

Common words

Figure 7 presents the findings regarding common words.

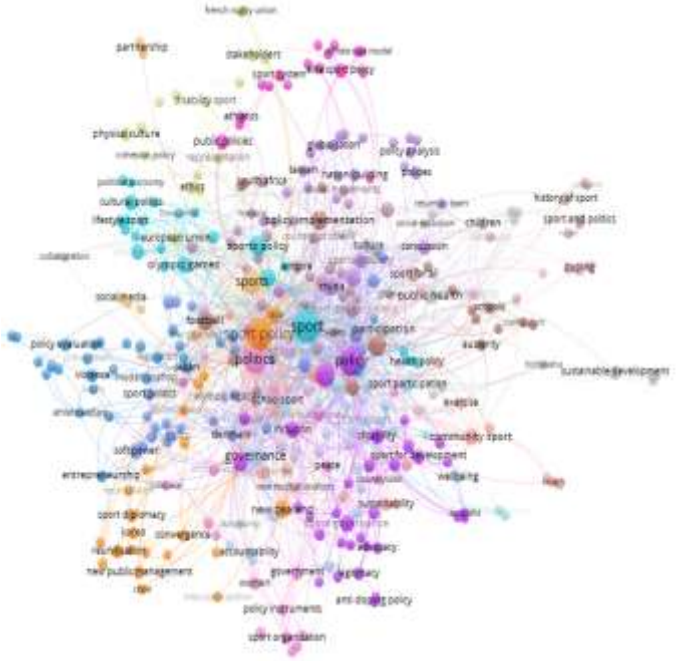

Figure 7. Common words

When Figure 7 is analyzed, it can be seen that the publications titled sport and politics are found in items: 365, cluster: 23, links: 1570, total link strength: 1926. Therefore, it was found that these studies consist of common words such as "sport", "sport policy", "politics", "public policy", "physical activity", "management", "elite sport", "policy implementation".

Trend topics

Figure 8 presents the findings regarding trending topics.

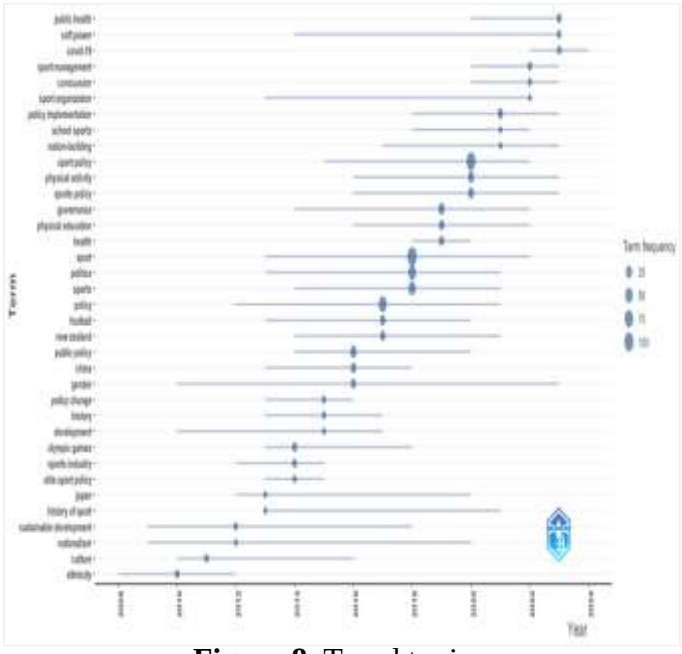

Figure 8. Trend topics

When Figure 8 is examined, it is seen that the publications titled sport and politics consist of trending topics such as "sport", "sport policy", "politics", "politics", "public policy", "physical activity", "management", "sport policy", "policy implementation", "football",

"physical education", "Olympic Games", "sport industry", "sport management", "sustainable development", "elite sport policy", "policy change", "sport organization".

Thematic Evolution

Figure 9 presents the findings regarding the thematic evolution map of keywords plus.

Figure 9. The thematic evolution map of keywords plus

When Figure 9 is examined, it is found that words such as "city", "power", "education", "football", "management", "health", "physical activity", "participation", "game", "prevention" are related to each other in the keyword search of the publications titled sports and politics.

Figure 10 presents the findings regarding the thematic evolution map of author keywords.

Figure 10. The thematic tvolution map of author's keywords

When Figure 10 is examined, it was found that words such as "Olympic games", "physical activity", "sports", "public policy", "sports policy" were related to each other in the author keywords of the publications titled sports and politics.

Figure 11 presents the findings regarding the thematic evolution map of titles.

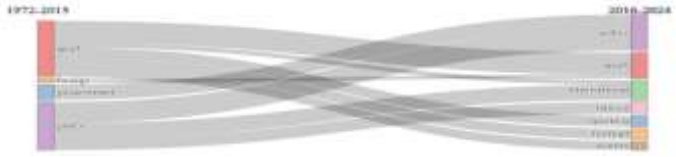

Figure 11. The thematic evolution map of titles

When Figure 11 is examined, it is found that words such as "sports", "state", "politics", "international", "leisure", "football" are related to each other in the titles of sports and politics publications.

Figure 12 presents the findings regarding the thematic evolution map of Abstracts.

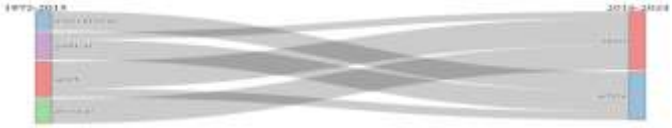

Figure 7. The thematic evolution map of titles

When Figure 12 is examined, it was found that words such as "international", "politics", "sports", "physical" are related to each other in the summaries of publications titled sports and politics.

Words frequency over time

Figure 13 presents the findings regarding the frequency of keywords plus over time.

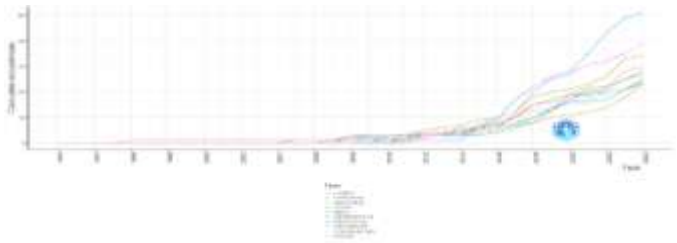

Figure 8. Keyword plus frequency over time

When Figure 13 is analyzed, it is seen that the frequency of use of words such as "politics", "physical activity", "participation", "management", "health", "performance", "policy" has increased after 2006.

Figure 14 presents the findings regarding the frequency of author's keywords over time.

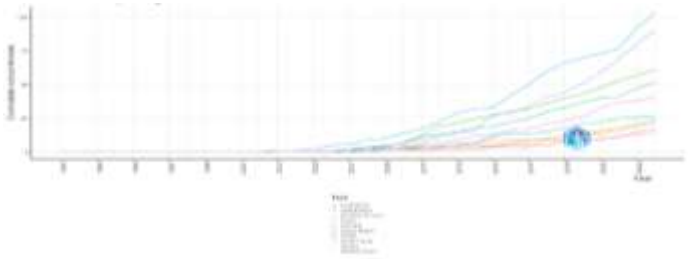

Figure 9. Author's keywords frequency over time

Figure 14 shows that the frequency of use of words such as "sport", "sport policy", "politics" "public policy", "physical activity", "management" increased after 2003 in the author keywords of publications on sport and politics.

Figure 15 presents the findings regarding the frequency of titles over time.

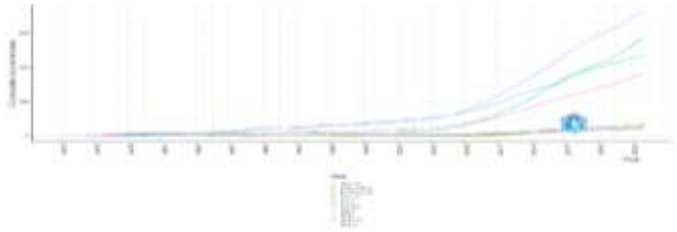

Figure 10. Titles frequency over time

Figure 15 shows that the frequency of the use of words such as "sport", "politics" "policy", "development", "analysis", "international", "physical" in the titles of sports and politics publications increased after 1987.

Figure 16 presents the findings regarding the frequency of Abstracts over time.

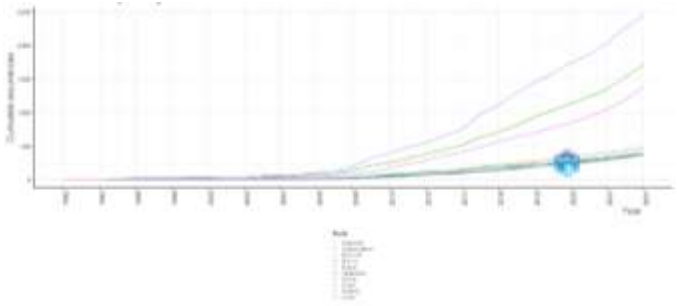

Figure 11. Abstracts frequency over time

Figure 16 shows that the frequency of words such as "sport", "politics", "policy", "international" and "physical" in the titles of sports and politics publications increased after 2008.

Affiliations production over time

Figure 17 shows the findings on the frequency of affiliates over time.

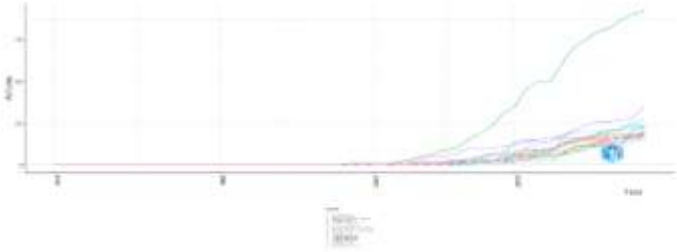

Figure 12. Affiliations production over time

When Figure 17 is analyzed, it is seen that the number of publications on sport and politics by institutions such as "German Sport University Cologne", "Norwegian School of Sport Sciences", "La Trobe University", "Leeds Beckett University" increased after 2001.

Countries production over time

Figure 18 shows the findings regarding the production frequency of countries over time.

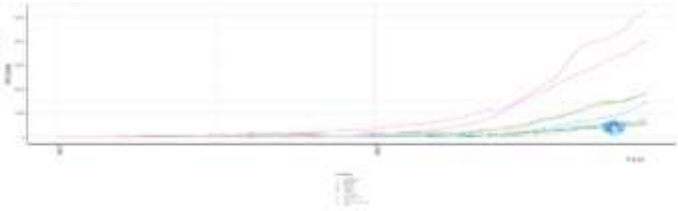

Figure 13. Countries production over time

Figure 18 shows that the production values of countries such as "Germany", "United Kingdom", "Canada", "Australia", "New Zealand", "USA" and "China", which publish sports and politics titles, increased after 2000.

Sources production over time

Figure 19 shows the findings regarding the production frequencies of resources over time.

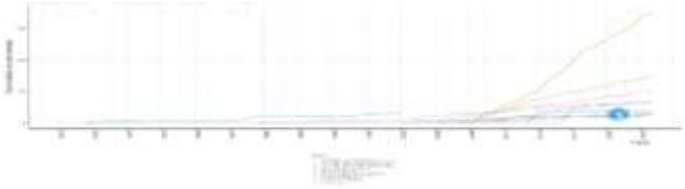

Figure 14. Sources production over time

Figure 19 shows that the production values of countries publishing sport and policy titles such as "International Journal of Sport Policy And Politics", "Routledge Handbook of Sport Policy", "International Journal of The History of Sport", "Sport in Society", "International Review for The Sociology of Sport" increased after 2002.

Reference spectroscopy

Figure 20 shows the findings of Reference Spectroscopy.

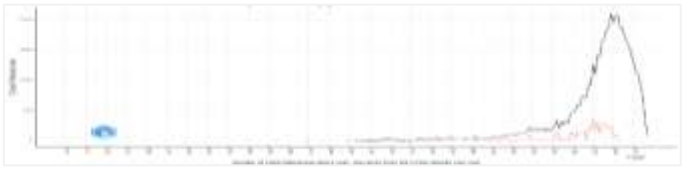

Figure 20. Reference spectroscopy

Figure 20 shows that the reference spectroscopy values of the publications on sports and politics are highest in 2008 (n: 2088), 2011 (n: 2069), 2010 (n: 2050), 2009 (n: 1941), 2007 (n: 1877), 2013 (n: 1868), 2012 (n: 1844), 2006 (n: 1843), 2014 (n: 1702), 2005 (n: 1682).

Web of Science index

Figure 21 shows the findings for the Web of Science Index.

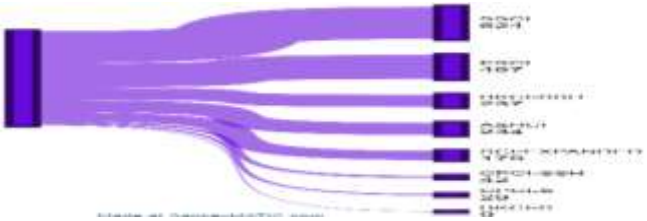

Figure 21. Web of science index

In Figure 21, publications titled sports and politics are shown in Social Sciences Citation Index (SSCI) (n: 624), Emerging Sources Citation Index (ESCI) (n: 467), Book Citation Index - Social Sciences & Humanities (BKCI-SSH) (n). : 237), Arts & Humanities Citation Index (A&HCI) (n: 234), Science Citation Index Expanded (SCI-EXPANDED) (n: 179), Conference Proceedings Citation Index - Social Science & Humanities (CPCI-SSH) (n: 42), Conference Proceedings Citation Index - Science (CPCI-S) (n: 29), Book Citation Index - Science (BKCI-S) It was determined that it was published in (n: 9) indexes.

Web of Science categories

Figure 22 shows the findings regarding examples from Web of Science Categories.

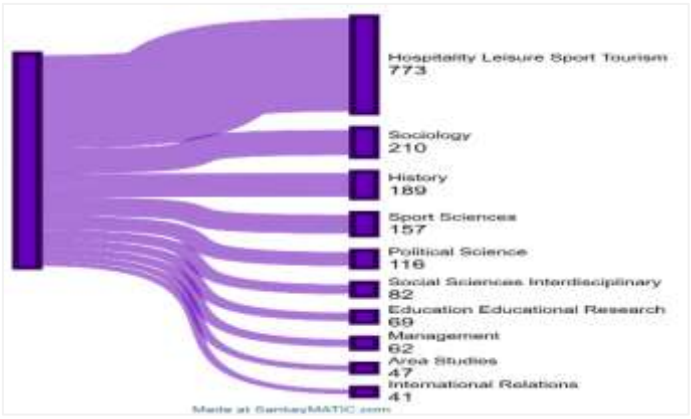

Figure 15. Web of science categories

Figure 22 shows that most of the publications on sports and politics were published in Hospitality Leisure Sport Tourism (n: 773), Sociology (n: 210), History (n: 189), Sport Sciences (n: 157), Political Science (n: 116), Social Sciences Interdisciplinary (n: 82), Education Educational Research (n: 69), Management (n: 62), Area Studies (n: 47), International Relations (n: 41) Web of Science categories.

Languages

Figure 23 shows the findings regarding the language of publication.

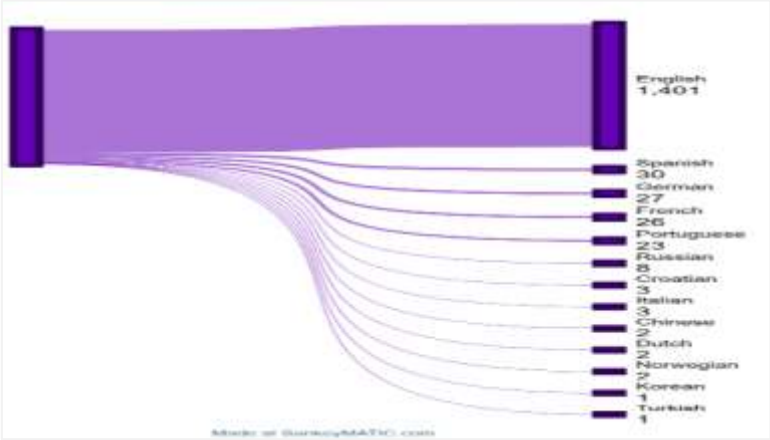

Figure 16. Languages

Figure 23 shows that publications on sports and politics were published in English (n: 1,401), Spanish (n: 30), German (n: 27), French (n: 26), Portuguese (n: 23), Russian (n: 8), Croatian (n: 3), Italian (n: 3), Chinese (n: 2), Dutch (n: 2), Norwegian (n: 2), Korean (n: 1), Turkish (n: 1).

Citation analysis

Figure 24 shows the density map of author citations.

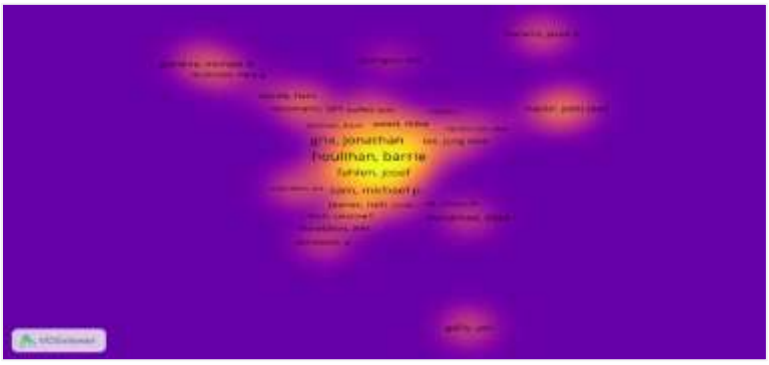

Figure 17. Author citations

Figure 24 shows that the most cited publications on sports and politics are by Grix, Jonathan (citations: 572); Coalter, Fred (citations: 428); Wheaton, Belinda (citations: 325); Houlihan, Barrie (citations: 315); Darnell, Simon C. (citations: 276); Fahlen, Josef (citations: 266); Skille, Eivind A. (citations: 242); Stenling, Cecilia (citations: 221); Weed, Mike (citations: 205); Mansfield, Louise (citations: 200).

Figure 25 shows the density map of document citations.

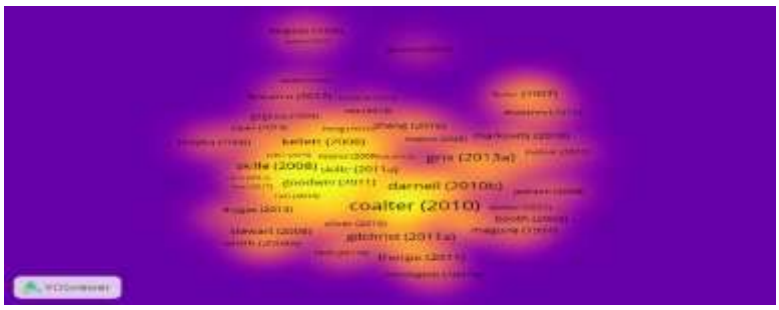

Figure 18. Document citations

In Figure 25, it was found that the most frequently cited publications on sports and politics are: Coalter (2010) (citations: 355); Weed (2015) (citations: 174); Darnell (2010b) (citations: 167); Grix (2013a) (citations: 165); Gilchrist (2011a) (citations: 132); Hayhurst (2009) (citations: 124); Skille (2008) (citations: 120); Dudley (2017) (citations: 112); Black (2007) (citations: 111); and Houlihan (2006) (citations: 109)

Figure 26 shows the density map of sources citations.

Figure 19. Sources citations

In Figure 26, it has been found that the publications most cited in the fields of sport and politics are as follows: International Journal of Sport Policy and Politics (citations: 2758); International Review for the Sociology of Sport (citations: 1041); Sociology of Sport Journal

(citations: 594); Sport in Society (citations: 537); International Journal of the History of Sport (citations: 441); European Sport Management Quarterly (citations: 440); Sport, Education and Society (citations: 345); Journal of Sport & Social Issues (citations: 272); Sport Management Review (citations: 199); Journal of Sport Management (citations: 166). These publications have been cited by various sources.

Figure 27 shows the density map of organizations citations.

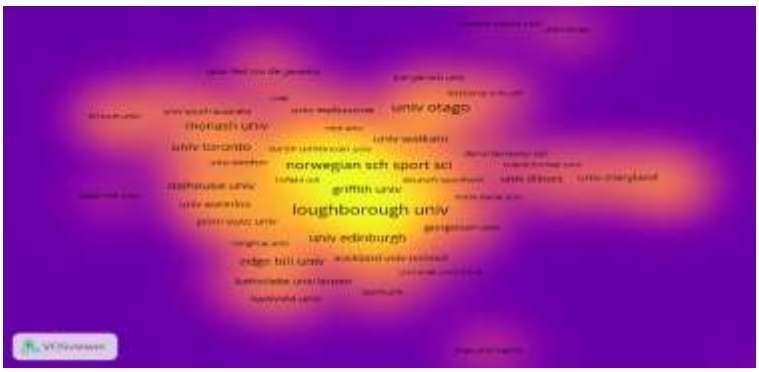

Figure 20. Organizations citations

In Figure 27, it has been found that the highest citations in the field of sports and politics publications are from the following institutions: Univ Birmingham (citations: 707), Univ Loughborough (citations: 532), Univ Otago (citations: 525), Loughborough Univ (citations: 454), Dalhousie Univ (citations: 454), Univ Brighton (citations: 429), Norwegian School of Sport Sciences (citations: 409), Univ Stirling (citations: 379), Univ Durham (citations: 363), and Hedmark Univ College (citations: 341).

Figure 28 shows the density map of countries citations.

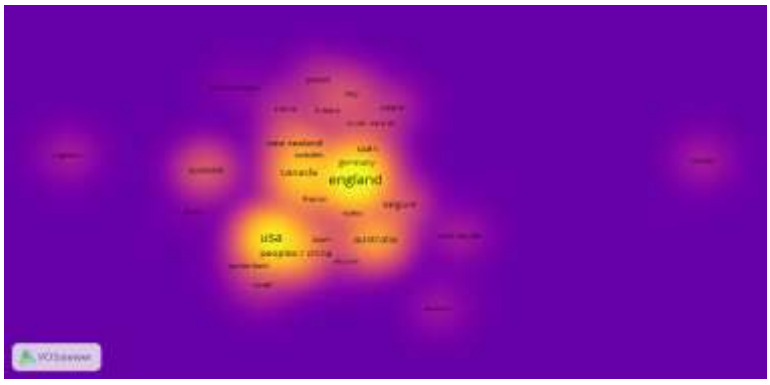

Figure 21. Countries citations

In Figure 28, it has been found that publications on sports and politics have received the highest number of citations from the following countries: England (citations: 4,177), USA (citations: 1,749), Australia (citations: 1,558), Canada (citations: 1,431), Norway (citations: 1,047), New Zealand (citations: 794), Scotland (citations: 602), Sweden (citations: 540), Belgium (citations: 340), and Germany (citations: 328)

Discussion and Conclusion

This study presents a bibliometric analysis of publications in the field of sports and politics, revealing key trends and research dynamics. Data obtained from 1,529 publications and 660 sources between 1972 and 2024 indicate that the relationship between sports and politics has rapidly increased, especially gaining significant momentum in recent years. This marks a

period in which sports have begun to attract more attention within social and political contexts. The main reason for choosing 1972 as the beginning of the review period is that this is the first academic publication in the databases in which sports and politics are discussed together. Therefore, the study aims to comprehensively evaluate the development of the field from the chronological starting point of the literature. This methodological choice ensures the historical continuity of the analysis and provides the opportunity to reveal the changes and transformations over time.

The high number of publications in the 2010s and early 2020s suggests that sports are no longer merely a form of entertainment, but are increasingly playing a central role in shaping social and economic policies. Furthermore, the years 2010, 2019, and 2018 stand out in terms of average annual citations, indicating the high academic impact of studies published during this period. For example, publications from 2010 received an average of 1.52 citations, reflecting growing interest and recognition in the field. These findings demonstrate that research on sports and politics is rapidly developing both quantitatively and qualitatively.

Another important finding is the concentration of co-authorship networks in countries such as the United Kingdom, the United States, Australia, Canada, and China. These countries are the main centers of sports policy research, reflecting the global organization of scientific collaborations in sports and politics and the strong academic interactions across different geographical regions. In line with the literature, these findings suggest that scientific collaborations in the fields of sports and politics are organized within a global network, and that the scope of sports has become broader and more multidimensional in social, cultural, economic, political, and international contexts.

The variables analyzed for the first time in this study play an important role in addressing gaps in the literature. Keywords such as sustainable development and elite sports policy, which have been examined in a limited number of studies, aim to fill these gaps. These variables significantly contribute to understanding the relationship between sports and broader societal goals and offer a new perspective in the field. It has been observed that the number of studies focusing on these variables in the literature is insufficient; therefore, the findings of this study provide an important foundation that may guide future research.

The research periods are divided into two main categories by the Bibliometrix R program: 1972 and 2015 and 2016-2024. This distinction is based on thematic transformations, keyword differentiation and increase in publication density. The study found that the keywords “sport”, “foreign”, “government”, “policy” used between 1972 and 2015 are associated with the terms “policy”, “sport”, “international”, “leisure”, “sportive”, “football”, “events” in the 2016–2024 period. These results show that sport has become significantly broader and more multifaceted in areas such as politics, culture, economy, social life, and international relations. This shift demonstrates that sports are no longer viewed merely as physical activities, but have transformed into a social, economic, and political phenomenon filling important gaps in the literature. The emergence of keywords such as sustainable development and elite sports policy since the 2000s indicates a growing focus on understanding the relationship between sports and broader social objectives. This development represents a crucial step in understanding the impact of sports on politics and society.

The findings obtained in this study significantly align with the existing literature and reflect the theoretical, methodological, and thematic diversity of the field. Coalter (2010) points out that there are theoretical shortcomings in how sport is addressed within development-oriented policy frameworks and emphasizes that local contexts are often overlooked. He highlights

that overly optimistic assessments of sport's capacity to generate social capital carry various risks at both the political and practical levels. Darnell (2010) argues that sport has become a tool integrated into neoliberal development discourses and stresses the importance of acknowledging the ideological dimensions of sport policies within this context. Hayhurst (2009), examining the formation of development policies within postcolonial power relations, critically analyzes how sport is positioned within development narratives.

In relation to large-scale events aimed at increasing sport participation, a systematic review conducted by Weed et al. (2015) demonstrates that the 2012 London Olympics failed to achieve this goal. The study finds no strong empirical evidence supporting the direct and lasting impact of the so-called "demonstration effect." Grix and Lee (2013) reveal that emerging countries use international sports mega-events as part of their soft power strategies, suggesting that such events play a functional role in enhancing national reputation, visibility, and diplomatic influence on the global stage. Evaluating the role of sport mega-events in the context of symbolic politics, Black (2007) argues that these events serve important functions in nation-building, generating societal legitimacy, and enabling repositioning strategies at the global level. The study by Gilchrist and Wheaton (2011) analyzes how lifestyle sports such as parkour are associated with youth policies and demonstrates their potential as alternative participation models that go beyond traditional sport structures. Focusing on the local implementers of sport policies, Skille (2008) proposes a new theoretical framework to explain how voluntary sport clubs interpret and restructure central policies within local contexts. Dudley et al. (2017), on the other hand, approach the concept of physical literacy from a multidimensional perspective within public health, education, sport, and recreation policies, discussing how the right to lifelong physical activity can be secured at the policy level.

This study makes a significant contribution to existing bibliometric analyses. Compared to the study by Cansun and Arık (2019) focusing on political science publications in Turkey and the bibliometric analysis of the International Journal of Sport Policy and Politics by Moradi et al. (2023), this study contributes to the broader international literature by examining the global relationship between sports and politics. This distinction emphasizes the originality of this study within the literature on sports and politics. Future research can benefit from examining these two fields from a broader perspective to enable more in-depth analysis.

Unlike Cansun and Arık (2019) and Moradi et al. (2023), which focused on Turkey or specific journals, this study highlights the interdisciplinary approach and increasing international collaboration in sports and politics research. Additionally, unlike earlier Turkish studies, which were mostly published in English and in limited outlets, this study shows that global research on sports and politics receives more citations and has a more prominent place in the international literature. This demonstrates that research in this field has a wider academic impact and is attracting increasing global interest.

Future studies will provide deeper insights into the relationship between sports and politics. This study also serves as an important reference point for future research examining the political and social impacts of sports. Filling gaps in the literature will help to better understand the connections between sports and critical social issues such as social justice, equality, and gender.

In conclusion, the findings of this study show that the relationship between sports and politics has become an increasingly prominent research area with global impact. The analysis demonstrates that sports are not only a form of entertainment but also a significant phenomenon in social, cultural, economic, and political contexts. These findings play an

important role in generating new research questions and directions for future studies in the field.

Suggestions

In order to examine the relationship between sport and politics in depth in the future, studies can be conducted on the social effects of sport, its relationship with regional politics, and the effects of media and social media use. Furthermore, the role of sport in global politics can be put into a broader perspective through multi-method empirical research and international comparative analysis. The role of sport in diplomacy, social policy and economic relations are also important areas of research. These studies will contribute to our understanding of the integration of sport with politics and its impact on social changes. However, it is seen that Metaverse technology has not yet been sufficiently addressed in the literature examining the relationship between sports and politics. In this context, an original study examining the interactions between sports and politics through digital platforms and virtual environments would make a significant contribution to understanding both the effects of Metaverse technology on the sports industry and the potential reflections of digitalization on politics. In the future, the role of Metaverse technology on sport organizations, politics and social interactions should be explored in more depth. Finally, it is suggested that national and international thesis studies should be examined through bibliometric analysis to further explore the relationship between sport and politics.

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Investigation of The Relationship Between Dynamic and Reactive Strength Variables in Wrestlers

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Abstract

In order to achieve a positive improvement in an athlete's performance, what to do in the next training phase is possible by accurately monitoring the changes made by the previous training phases on performance. The aim of this research is to determine the relationship between dynamic and reactive strength variables for accurately determine the strength requirements of wrestlers. 24 male wrestlers participated in the research voluntarily. The suitability of the data for normal distribution was evaluated with the Shapiro-Wilk test. Kruskall-Wallis H test was used to determine the difference between data groups. Regression analysis was applied to estimate RSI values at different heights of DSI values obtained from the research group. According to correlation analysis; It was determined that the RSI value obtained from the 50 cm jump height showed the highest correlation with other heights. The Kruskall Wallis H test, RSI values obtained from different jump heights do not show a statistically significant difference compared to DSI index criteria ($p>.05$). The regression analysis, it was revealed that there was a moderate and significant relationship between RSI values at different heights and DSI value ($R=0.516$, $R^2=0.466$, $p>0.05$). It can be said that the application of RSI values at higher jump heights in wrestlers increases the correlation coefficient with the DSI values, and the 70 cm jump height is determinant in revealing the explosive force.

Keywords: Dynamic strength index, Reactive strength index, Wrestling,

Introduction

In order to achieve a positive improvement in an athlete's performance, what to do in the next training phase is possible by accurately monitoring the changes made by the previous training phases on performance (Comfort, Thomas, Dos'Santos, Suchomel, et al., 2018; DeWeese et al., 2015).

In order for the wrestler to be successful during the competition, his physiological, physical and motoric abilities should come to the fore as well as his technical and tactical characteristics (Kraemer et al., 2004). Wrestling includes advanced capacities for strength, speed, flexibility, coordination, quickness, agility, balance, aerobic capacity and maximal anaerobic power abilities of athletes consisting of short-term and high-intensity movements that include open skills (Chaabene et al., 2017; Horswill, 1992; Yoon, 2002). It is known that wrestling develops in direct proportion to strength development (Lansky, 1999). Especially strength and maximal power abilities play an important role in the performance processes of wrestlers (Yoon, 2002). Therefore, the majority of wrestling training consists of exercises aimed at developing maximal strength and power.

It is known that wrestlers do general strength training during the preparation period within a training period. However, athletes need different strength requirements (maximal strength, explosive strength, continuity in strength) (Horswill, 1992). In order to meet the strength requirements effectively, the strength parameters of the athlete must be known.

In this context, the aim of the research is to determine the relationship between dynamic and reactive strength variables in order to accurately determine the strength requirements of wrestlers.

Material and Method

Ethics committee permission

Licensed athletes in wrestling clubs operating in Ankara participated in the research voluntarily. Participants signed the voluntary consent form before the research. Ethical permission for this research was discussed by Gazi University Ethics Commission at the meeting numbered 10 dated 24.05.2022 and approved with code number 2022-688.

Participants

The research group consisted of wrestlers training in Ulaştırma, Yaşar Dogu Wrestling Specialization, Champion Wrestlers and Ankara Metropolitan Municipality Sports Clubs operating in Ankara.

The descriptive statistical results of the height, body weight and body mass index values obtained from the wrestlers (n=24) who make up the research group are given in Table 1.

Table 1. Descriptive statistics results from wrestlers

Variables	Mean	SD
Age (years)	19.75	3.3
Height (cm)	175.63	5.99
Weight (kg)	79.29	15.57
Body Fat Percentage (%)	14.36	5.93

Sports Age (years)	6.79	3.81
Weekly Training Hour (Hours)	13.71	4.89
Body Mass Index (kg/m^2)	25.59	3.91

Abbreviations: BFP= Body Fat Percentage, SA= Sports Age, WTH= Weekly Training Hour, BMI= Body Mass Index, SD= Standard Deviations

Data Tools and Collection

Height measurement

The heights of the athletes were measured with a Seca (22089 Hamburg, Germany, Model:213 1721009 35/13, Designed in Germany- Made in Chine) height meter with an accuracy of ±1mm.

The wrestlers, barefoot and wearing standard athletic attire (shorts and t-shirts), were positioned in the anatomical stance with their heels and back aligned against the vertical metal rod of the stadiometer. Stature was measured in centimeters and systematically recorded from the device's calibrated scale.

Body weight and body fat percent measurements

Body weight (BW) and body fat percentage (BFP) of the athletes were assessed using a Tanita BC-418 MA segmental body composition analyzer (Maeno-cho, Itabashi-ku, Tokyo, Japan). To ensure measurement accuracy, athletes were instructed to refrain from eating or consuming any liquids (including water, coffee, alcohol, etc.) for at least three hours prior to testing, to avoid any form of physical activity on the day before the test, and to abstain from using saunas or bathing. Additionally, they were informed in advance regarding toilet usage protocols both the day before and on the day of the assessment. All measurements were conducted with participants wearing light athletic clothing (shorts and t-shirts).

Prior to the measurement, a 0.5 kg tare was applied to the Tanita device to account for clothing weight. Participants' age and height were entered into the system. Subjects were then instructed to step onto the metal footpads barefoot, after which the device measured their body weight. During the impedance assessment, participants held the hand electrodes with both hands, arms fully extended, parallel to the torso, and approximately five centimeters away from the body, ensuring no flexion at the elbows until the measurement was completed. Upon completion, the device automatically printed the BFP (%) and BW (kg) values.

Isometric mid-thigh pull (IMTP) (maximal strength)

The Baseline Back Strength Dynamometer (T.K.K.5402, Back-D, Takei Scientific Instruments Co., Ltd., Japan) was utilized to assess the maximal isometric strength of the lower extremity musculature. (Beattie et al., 2017; Stone et al., 2005).

Participants were instructed to report for testing wearing standardized athletic attire, including shorts, t-shirts, and training shoes. Prior to testing, a structured warm-up protocol was administered, consisting of five minutes of low-intensity jogging followed by two minutes of dynamic stretching exercises. During the test, participants were positioned with their feet placed on the designated foot markers on the dynamometer platform. They were instructed to flex their knees to an angle of 131° ± 9°, maintain fully extended elbows, and keep their spine in a neutral alignment, ensuring that the head, thoracic, and lumbar regions remained upright and stable throughout the measurement. (Beattie et al., 2017). The dynamometer's chain was

individually adjusted so that the handle aligned with the mid-thigh level, positioned just above the participant's patella.

In order for the participants to get used to the test and to warm up, 50% and 75% of the perceived difficulty level were each pulled. A one-minute rest interval was given between trials. Following the completion of the warm-up and familiarization trials, three maximal strength measurements were recorded from each participant. Each athlete was given a 2 minute rest period between measurements. After removing the gap in the chain of the dynamometer during each measurement, the athletes were asked to push the dynamometer strongly with their feet and to pull the rod of the dynamometer as fast and hard as possible. Athletes were asked to pull the rod of the dynamometer for five seconds. The test was started with the command "3, 2, 1 check" (Comfort, Thomas, Dos'Santos, Jones, et al., 2018). Verbal statements were directed to the athletes to motivate them while pulling. The last data indicated by the needle of the dynamometer was recorded in kg.

Reactive strength index measurement

The reactive strength index (RSI) of the athletes was measured using the Opto Jump Next system (Bolzano, Bozen, Italy) (Beattie et al., 2017; Healy et al., 2016; Lehnert et al., 2018).

The Drop Jump protocol was performed using the Opto Jump Next®□ system to assess the reactive strength index (RSI). Prior to the test, participants received verbal instructions regarding the procedure, followed by a two-minute warm-up specifically designed for jumping exercises. Leaps of getting used to the test were made. After resting for two minutes, they were asked to stand on the wooden box with a height of 30, 40, 50, 60 cm, with 30 seconds of rest between the tests, respectively (Beattie et al., 2017; Beattie & Flanagan, 2015; Flanagan & Comyns, 2008; Markwick et al., 2015; Prieske et al., 2019; Walsh et al., 2004; Young, 1995). The wrestlers were asked to extend one foot forward, with their hands on the waist, to fall into the $1m^2$ interior of the device, which is parallel to each other on the floor, and to jump as high as they can quickly as soon as they touch the ground (Walsh et al., 2004). Athletes were instructed to avoid knee flexion during the jump and to perform the test while maintaining muscular tension throughout. The test was repeated twice, with a 30-second rest interval between attempts, and both ground contact time and jump height were recorded. The reactive strength index (RSI) was calculated based on the highest RSI value (m/s) obtained, using the following formula: RSI = Jump height (m) / Ground contact time (sec). (Beattie et al., 2017; Flanagan & Comyns, 2008).

Vertical jump measurement

The vertical jump performance of the athletes was assessed using the Opto Jump Next system (Bolzano, Bozen, Italy).

Countermovement jump was made to determine the vertical jump height of the athletes (Comfort, Thomas, Dos'Santos, Suchomel, et al., 2018). Active jump protocol is applied in Opto Jump Next® device. Before the test, the participants were given verbal information about the measurement. Practice jumps were performed three times. A two-minute rest period was given, and then it was tested. A 150 cm long, 0.5 kg, 3 cm diameter wooden stick was used to prevent the participants from pulling their shoulders and arms. Participants took the wooden stick on their shoulders and made three jumps. They held the wooden stick on their shoulders throughout the jump. Leap results were recorded in cm.

Dynamic strength index measurement

Comparing the peak force achieved during CMJ and IMTP by calculating the dynamic strength index (DSI=CMJ PF/IMTP PF) has been proposed to provide information about the training requirements of athletes. DSI = Ballistic peak force / Isometric peak force ratio was calculated with the help of formulas (Comfort, Thomas, Dos'Santos, Jones, et al., 2018; Suchomel et al., 2020).

DSI values detected in athletes were evaluated according to Table 2 (Cormie et al., 2011; Suchomel et al., 2020).

Table 2. Percentages used in the interpretation of DSI

DSI Score	Overall Assessment	Recommended Training Program
<%60	Low	Ballistic Strength Training
%60 - %80	Moderate	Concurrent Strength Training
>%80	High	Maximal Strength Training

Statistical Analysis

Statistical analysis of the data was performed using IBM SPSS Statistics Version 21 (IBM Corp., Released 2012, Armonk, NY). The normality of the data was assessed using the Shapiro-Wilk test. The Kruskal-Wallis H test was employed to determine differences between groups for data that did not follow a normal distribution. Regression analysis was conducted to predict BMI values based on the reactive strength index (RSI) values at different jump heights within the study group. A significance level of $p < 0.05$ was considered statistically significant.

Findings

Statistical analyzes of the dynamic strength obtained from the wrestlers constituting the research group and the reactive strength index values obtained from different heights are given in this section.

Regression analysis results of wrestlers reactive strength index values at different angles to predict their DSI values (7.58±21.22) are given in Table 3.

Table 3. Regression analysis results regarding the prediction of DSI values of reactive strength index values of wrestlers at different heights

Variables	B	SD	β	T	p	Part r	Partial r
Constant	100.335	16.840		5.958	0.000**		
40 cm RSI m/s (1.15± 0.34)	-45.679	22.967	-0.745	-1.989	0.061	-0.236	-0.415
50 cm RSI m/s (1.22± 0.35)	-10.526	33.133	-0.178	-0.318	0.754	-0.106	-0.073
60 cm RSI m/s (1.21± 0.35)	-37.830	47.542	-0.635	-0.796	0.436	0.089	-0.180
70 cm RSI m/s (1.10± 0.38)	76.594	36.572	1.404	2.094	0.042	0.270	0.533
$F_{(4-19)}$=1.720	P=0.028						

R=0.516	R^2=0.466

*p ≤ 0.05, **p ≤ 0.001

Upon examining Table 3, a moderate and statistically significant relationship is observed between the RSI values at different jump heights and the DSI value. (R=0.516, R^2=0.466, p>0.05). The aforementioned variables together give 47% of the total variance in the DSI value. According to the standardized regression coefficient (β), it is seen that the RSI value revealed at 70 cm jump height has a significant effect on DSI, while RSI predictive variables at other heights do not have a significant effect on DSI. When the bilateral and partial correlations between predictive variables and DSI jump were examined, a moderate and positive relationship was found between 70 cm jump height RSI and DSI, and negative and low correlations with other RSI values.

The correlation results for the relationship between the reactive strength index (RSI) values at various jump heights are detailed in Table 4.

Table 4. Correlation results of the relationship between the reactive strength index values revealed at different heights

Variables		**40 cm RSI m/s**	**50 cm RSI m/s**	**60 cm RSI m/s**	**70 cm RSI m/s**
40 cm RSI m/s	Pearson Correlation	1	0.803	0.836	0.843
	P		0.000**	0.000**	0.000**
50 cm RSI m/s	Pearson Correlation	0.803	1	0.936	0.931
	P	0.000**		0.000**	0.000**
60 cm RSI m/s	Pearson Correlation	0.836	0.936	1	0.952
	P	0.000**	0.000**		0.000**
70 cm RSI m/s	Pearson Correlation	0.843	0.931	0.952	1
	P	0.000**	0.000**	0.000**	

*p ≤ 0.05, **p ≤ 0.001

Upon examining Table 4, it was found that the RSI value obtained from the 50 cm jump height exhibited the strongest correlation with the RSI values at other jump heights in the correlation analysis. In other words, 50 cm jump height is considered as an important height in revealing the RSI.

The Kruskall Wallis H-test results regarding the difference in the RSI values of the wrestlers at different heights according to the ballistic, concurrent and maximal strength criteria obtained from the DSI test are given in Table 5.

Table 5. H-test results regarding the difference of RSI values of wrestlers at different heights according to ballistic, concurrent and maximal strength criteria obtained from DSI test

Variables		**Mean**	**SD**	**X^2**	**P**
40 cm RSI m/s	Ballistic	1.19	0.26	0.621	0.733

	Concurrent	1.13	0.41		
	Maximal	1.15	0.40		
50 cm RSI m/s	Ballistic	1.28	0.34	1.750	0.417
	Concurrent	1.12	0.39		
	Maximal	1.26	0.37		
60 cm RSI m/s	Ballistic	1.25	0.38	1.369	0.504
	Concurrent	1.13	0.33		
	Maximal	1.26	0.39		
70 cm RSI m/s	Ballistic	1.07	0.39	0.992	0.609
	Concurrent	1.04	0.38		
	Maximal	1.21	0.43		

*p ≤ 0.05, **p ≤ 0.001

Upon examining Table 5, the RSI values obtained from different jump heights do not exhibit a statistically significant difference according to the DSI index criteria (p> 0.05). In other words, it was determined that wrestlers with different criteria according to the DSI value had similar RSI values in their jump heights. It can be said that the RSI values of the wrestlers who need ballistic strength training at 40 and 50 cm heights, and the wrestlers who need maximal strength at 60 and 70 cm jump heights, are better.

Discussion and Conclusion

According to the existing literature, studies in which RSI and DSI values are measured together are very few. The aim of this study is to examine the differences and the relationship between DSI and RSI values in wrestlers. The commonly used reactive strength index measures the ability of athletes to switch to concentric contraction (stretching-shortening cycle) abruptly after eccentric muscle contraction (Newton & Dugan, 2002; Young, 1995). Some studies have reported that the RSI is a valid performance measure that can discriminate between athletes at different competitive levels (James et al., 2020). At the same time, the optimal drop height values can be determined with the RSI measurement (Byrne et al., 2010). Optimal drop height values (respectively; 30cm, 20-40-50 cm, 40 cm) vary in many different sports branches such as athletics, basketball and volleyball (Andrade et al., 2017; Flanagan & Comyns, 2008; Markwick et al., 2015). In the literature, there is no reliable optimal jump height in accordance with the characteristics of the wrestling branch. According to the results of this study, 50 cm jump height is important in determining the RSI values in wrestling athletes.

Like RSI in DSI, it is very important to determine the ability of athletes to produce force in the shortest time. In DSI, on the other hand, it is aimed to determine the dynamic strength abilities of the athlete according to the maximum strength capacity. This index is very useful for determining whether the athlete needs maximum strength training, ballistic strength training or concurrent training as stimulant training. Since DSI measures the ability of athletes to generate force during a dynamic or isometric test and their ability to generate force during a ballistic exercise, conditioners can determine how much of this potential athletes can use during a high-intensity movement. Therefore, DSI is seen as a tool to

evaluate an athlete's lower body strength qualities and to guide future training programs (Sheppard et al., 2011). Expressed as the ratio DSI = ballistic peak force (N) / isometric peak force (N) (Sheppard et al., 2011; Young et al., 2014). In the researches, two different methods, SJ and CMJ, were used to measure the ballistic peak force value in the dynamic strength index formula. The performance of an opposing/contra move is almost always reported to be better than a non-contra move in the absence of time pressure (McGuigan & Winchester, 2008; McGuigan et al., 2006). For example, height achieved or force produced during a CMJ is better than scores achieved during an SJ. The traditional view of the difference between CMJ and SJ performances is that the CMJ is a better test, as it reflects a better use of the stretch-shortening cycle. However, it should be noted that a larger difference is not always better (McGuigan et al., 2006). Although there is no significant difference between both methods, it has been proven that there is a strong relationship between these methods and DSI values (Comfort, Thomas, Dos'Santos, Jones, et al., 2018).

Studies of wrestlers have shown that isometric strength is compromised throughout a match (Kraemer et al., 2001). Some wrestlers can perform a lot of offensive action in short periods of time, while others can be more defensive and slow down the pace of the match (Kraemer et al., 2004). Because of all this, it is also necessary to measure the maximum force generation capacity to determine whether the athlete should emphasize explosive force production or maximal force production during the next training phase (Comfort, Thomas, Dos'Santos, Jones, et al., 2018). Therefore, in this study, while IMTP was used to determine the maximum isometric strength of the athletes, how much of the total strength capacity they could produce was determined with CMJ, which includes a ballistic movement.

According to the DSI values of this study, similar RSI results were seen in the 40-50-60-70 cm drop height of the wrestlers who need to do ballistic/concurrent or maximal strength training ($p > .05$). DSI ensures that wrestlers tend to appropriate training at different training stages during certain periods, but jump height is not related to the different training needs of the athletes.

RSI is important for standardizing drop jump height in depth jumps, but optimal drop jump height values are still under investigation due to methodological differences in studies. While investigating these values, the characteristics of the sports branch should be taken into account.

In conclusion, it can be inferred that the application of RSI values at higher jump heights, particularly the 70 cm jump height, plays a key role in revealing explosive strength, as it significantly enhances the correlation coefficient with DSI values. As a suggestion, the relationship between different long-term training programs and dynamic strength index can give more detailed information about the strength production of the athlete and his capacity to use it. RSI and DSI can allow wrestlers to train in accordance with their condition.

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Examınatıon Of The Relationship Between Badminton Coaches' Leadership Characteristics And Employee Performance

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Abstract

The main purpose of the study is to examine the relationship between the leadership characteristics of badminton coaches and employee performance. The universe of the study was formed by badminton coaches, while the sample group consisted of 166 coaches selected by convenience sampling method. As data collection tools; "Personal Information Form" Leadership Scale for Sports" and "Employee Performance Scale " were used. According to the analysis of the obtained data, independent samples were used to determine the differences between the groups. Samples T-Test and single factor analysis of variance (ANOVA) test were performed. Pearson Correlation analysis test was performed to determine the relationship between variables. As a result of the analyses, no statistically significant difference was observed in gender and education status variables. It was observed that there was a significant difference in professional tenure and coaching level variables. It was determined that there were low-level negative correlations between the age variable and the "Contextual" sub-dimensions. In the data regarding the "Leadership for Sports" scale sub-dimensions and total scores, a low positive correlation was found between age and the "Democratic Behavior" and "Leadership for Sports Scale Total" sub-dimensions, while a positive moderate relationship was found between the "Education-Training" and "Positive Feedback" sub-dimensions.

Keywords: Badminton coaches, Leadership for sports, Employee performance.

Introduction

Individuals are social groups that have feelings and can share these feelings, they live together and need managers and leaders to achieve their goals. Throughout our lives, we encounter the concepts of "management, organization, leader and leadership". When it comes to group activities and efforts that need to be accomplished, which are at the center of our lives, leaders are needed to coordinate individual efforts (Özbey, 2003).

Leader, group members by felt however unsolvable partner idea And desires acceptance Possible One aim -form Presenter And group its members hidden your power This to the target oriented aspect into action passing (Eren, 2004). Leadership is defined as the process of reaching team members to determined goals and influencing them in line with these goals (Donuk, 2005). In the literature on leadership in sports environments, the focus has been on coaches, players, team captains, sports club organizations and managers in terms of team management (Chelladurai et al., 1980). Increasing the influence and competence of leaders and coaches helps improve player performance, increase the pleasure derived from the results and make players more successful. In line with these expectations, coaching plays an important role in individual and team sports. (Turan, 2010). Because a coach's professional attitude and behavior in individual or team sports can have a positive or negative effect on athletes. Good discipline, leadership and motivation in athletes are directly related to the leadership skills of coaches. (Yilmaz, 2014).

The success of teams, associations, organizations and companies in the field of sports is possible through collaborations with people who have leadership qualities. Having a manager with leadership qualities leads to great success. (Donuk, 2006). The coaching element, which is considered the key to success in sports, is now accepted by organization managers and management academics. Based on this situation, the factors in the working conditions of coaches, the nature of the work, the psychological effects of the work on employees, both material and moral incentives have become one of the most examined and questioned issues today. People spend a large part of their daily lives in the institution they work for, in their work areas and work-related matters. For this reason, factors such as job satisfaction, suitability of working conditions, and job characteristics are considered as the main factors affecting employee performance (Akan et al., 2016).

Employee performance is the time and effort that employees of an organization or company spend to complete the tasks assigned to them in order to meet their needs. In other words, employee performance is the ability of employees in an organization to fulfill the tasks assigned to them according to their characteristics and skills (Barutçugil, 2002; Öztemiz, 2005; Eren et al., 2005).

Employee performance is an important criterion for the success of an organization. In this respect, if an organization wants to achieve its goals and be successful in any field, it must first assign the right employees to the job. For this, a position must be defined and a suitable employee must be assigned to this position. Employee performance is important for employees as well as organizations and researchers. Employees must perform their assigned tasks in the best way possible, and gain high job performance, job satisfaction, a sense of success and respect (Yelboğa, 2006).

While coaches contribute to sports success through performance, at the same time, the sports organization should meet the expectations and commitments of its employees. Therefore, the health of coaches, how to increase their job performance and ensuring their health should be a priority area for organizations. Therefore, it is very important to determine the conditions that

negatively affect the well-being, health and work environment of employees and affect job performance, and to develop supportive policies and practices to prevent potential harms that these conditions may cause to employees. In order to achieve this, job demand and resource models should be explained in detail Demerouti et al., 2008; Bakker et al., 2000; Bakker et al., 2018).

When the relevant literature is examined, leadership based on ethical principles is expected from coaches. It is important how the behaviors exhibited while fulfilling this leadership attitude are perceived by the employees and whether these perceived leadership behaviors have any effect on the performance of the employees. In this context, the main purpose of the research is to examine the leadership characteristics of badminton coaches and their effect on employee performance.

Problem

The main problem of this research is to examine the relationship between the leadership characteristics of badminton coaches and employee performance. The sub-problems are;

1) Do the leadership characteristics and employee performance of badminton coaches differ significantly according to the gender variable?

2) Do the leadership characteristics and employee performance of badminton coaches differ significantly according to the educational status variable?

3) Do the leadership characteristics and employee performance of badminton coaches differ significantly according to the professional tenure variable?

4) Do the leadership characteristics and employee performance of badminton coaches differ significantly according to the coaching level variable?

5) Is there a significant relationship between the leadership characteristics of badminton coaches and employee performance?

Material and Method

In the study, the relational analysis model, one of the quantitative research methods, was used. The purpose of this model is to determine the relationship between two or more variables and the existence or degree of common variability between them (Karasar, 2014).

Ethics Committee Permission

The research was implemented after the ethics committee decision of Bayburt University dated 30.04.2024 and numbered E-83542712-050.99-201384 was obtained.

Research Group

The research group consisted of badminton coaches who had their visas completed in 2024 and were actively working.

Data Collection Techniques

A questionnaire was used as the data collection tool in the study. The questionnaire used in the study consisted of two parts. The first part of the questionnaire form is the personal information form prepared by the researcher including gender, age, educational status, length of service in the profession and coaching level. The second part of the questionnaire form is the Employee Performance Scale and the Leadership Scale for Sports. The "Employee Performance Scale" developed by Karakurum (2005) was used to evaluate employee performance. The scale consists of 11 items. The scale's "Task Performance" (α =.909),

"Contextual Performance" (α = 816), and total scale reliability (Cronbach's Alpha) were found to be.916. The Leadership Scale for Sports (SLOS) was used for the coach's perception of his/her own leadership behavior. The short form of the scale, which was developed by Chelladurai and Saleh (1980) and renewed by Teques et al., (2020), was created. The scale consists of 15 items. The Cronbach's reliability values of the scale; democratic behavior 0.87, authoritarian behavior 0.73, education and training 0.76, social support 0.85, positive feedback 0.75 were found.

Analysis of Data

The raw data collected using data tools were transferred to Microsoft Office, Excel program and coding process was completed. Then, descriptive analysis of the data transferred to SPSS (26th version) package program was performed. Based on these data, it was decided to conduct parametric tests. Independent sample t-test was applied for two-group variables related to demographic characteristics. One-way variance analysis was applied for variables with three or more groups. Pearson correlation analysis was used to test the relationship between variables. In all these statistical calculations, the significance level was considered as "p<0.05".

Findings

Table 1. Descriptive analysis results regarding demographic characteristics of the research group

Demographic Characteristics	Groups	f	%
Gender	Woman	54	32.5
	Male	112	67.5
	Total	166	100.0
Educational Status	Licence	117	72.67
	Postgraduate	44	27.32
	Total	161	100.0
Professional Tenure	1-5 Years	51	30.7
	6-10 Years	52	31.3
	11-15 Years	33	19.9
	15 Years and Above	30	18.1
	Total	166	100.0
Coaching Level	Level 1	17	10.4
	Level 2	77	47.0
	Level 3	62	37.8
	Level 4	8	4,9
	Total	164	100

Table 1 shows the frequencies and percentages of the demographic characteristics of the participants. While 32.5% (f =54) of the participants were female, 67.5% (f =112) were male. 72.6% (f =117) of these people had an undergraduate degree and 27.3% had a postgraduate degree. 30.7% (f =51) of the participants' professional tenure was 1-5 years, 31.3% (f =52) had 6-10 years, 19.9% (f =33) had 11-15 years and 18.1% (f =30) had 15 years or more. When the coaching level of the research group was examined; Stage 1 is 10.4% (f =17), Stage 2 is 47.0% (f =77), Stage 3 is 37.8% (f =62), Stage 4 is 4.9% (f =8).

Table 2. Descriptive analysis results regarding the sub-dimensions of data collection tools

	Duty	Contextual	WP Total	Education-Training	Democratic Behavior	Autocratic	Social Support	Positive Feedback	SILO Total
Average	4.25	4.31	47.07	3.80	3.40	2.67	3.54	4.33	53.25
Median	4.166	4.300	47.000	4.000	3.333	2.666	3.666	4.666	54.000
ss .	.495	.470	4.483	1.084	.918	.968	.846	.816	9.215
Skewness	-.737	-.567	-.127	-.705	-.159	.569	-.274	-1.458	-.495
Kurtosis	1.393	.941	-.172	-.669	-.660	-.257	-.347	1.304	1.170
Minimum	1.83	2.40	33.00	1.33	1.33	1.00	1.33	1.33	24.00
Maximum	5.00	5.00	55.00	5.00	5.00	5.00	5.00	5.00	75.00

Table 2 shows the descriptive analysis results for the sub-dimensions of the data collection tools. These data include mean, median, standard deviation (sd .), minimum and maximum values. Skewness and kurtosis values are also included in these data. Based on this, it is possible to say that the data exhibits a homogeneous distribution since it is seen to be between -1.5 and +1.5 (Tabachnick & Fidell, 2013).

Table 3. T-Test results based on wp and silo scores regarding gender variable

Sub-dimensions	Gender	n	Avg.	ss .	t	p
Duty	Woman	54	4.27	.473	.445	.657
	Male	112	4.23	.506		
Contextual	Woman	54	4.37	.431	1.064	.289
	Male	112	4.28	.487		
WP total	Woman	54	47.50	4.146	.853	.395
	Male	112	46.86	4.641		
Education-Training	Woman	54	3.72	1.116	-.616	.539
	Male	112	3.83	1.072		
Democratic Behavior	Woman	54	3.37	.877	-.323	.747
	Male	112	3.41	.941		
Autocratic	Woman	54	2.61	.891	-.586	.558
	Male	112	2.70	1.005		
Social Support	Woman	54	3.56	.863	.227	.821
	Male	112	3.52	.842		
Positive Feedback	Woman	54	4.41	.747	.968	.334
	Male	112	4.28	.848		
Total silo	Woman	54	53.07	7.973	-.179	.858
	Male	112	53.34	9.790		

Table 3 shows the t-test results regarding gender variables among the participants. It was observed that there was no significant difference between the WP and SILO sub-dimensions and the total scores (p>0.05).

Table 4. Pearson correlation analysis results regarding the age variable of the research group and the cp and silo sub-dimensions

		Duty	Contextual	WP Total	Education-Training	Democratic Behavior	Autocratic	Social Support	Positive Feedback	Silo Total
Age	r	.009	**-.236** **	-.118	**.363** **	**.175** *	-.050	.109	**.342** **	**.286** **
	p	.911	.002	.131	.000	.024	.522	.161	.000	.000
	n	166	166	166	166	166	166	166	166	166

*p<0.05; **p<0.01

Table 4 shows the results of the Pearson correlation analysis regarding the age variable of the participants and the CP and SILO sub-dimensions. According to these data, a low-level negative correlation was observed between the age variable and the "Contextual" sub-dimension (p<0.01). In the data regarding the SILO sub-dimensions and total scores, a low-level positive relationship was found between age and the “Democratic Behavior” and “SILO Total” sub-dimensions, while a moderate-level positive relationship was found between the “Education-Training” and “Positive Feedback” sub-dimensions (p<0.01).

Table 5. T-Test results based on wp and silo scores regarding the educational status variable

Sub-dimensions	Education	n	Avg.	ss .	t	P
Duty	Licence	117	4.21	.508	-1.582	.116
	Postgraduate	44	4.35	.472		
Contextual	Licence	117	4.33	.439	.215	.830
	Postgraduate	44	4.31	.551		
WP Total	Licence	117	46.95	4.393	-.934	.352
	Postgraduate	44	47.70	4.854		
Education-Training	Licence	117	3.64	1.147	-3.092	.002
	Postgraduate	44	4.21	.767		
Democratic Behavior	Licence	117	3.34	.958	-1.250	.213
	Postgraduate	44	3.55	.847		
Autocratic	Licence	117	2.67	.960	-.022	.983
	Postgraduate	44	2.68	1.046		
Social Support	Licence	117	3.53	.841	-.287	.774
	Postgraduate	44	3.57	.857		
Positive Feedback	Licence	117	4.25	.890	-1.659	.099
	Postgraduate	44	4.50	.590		
SILO Total	Licence	117	52.37	9.488	-1.965	.051
	Postgraduate	44	55.59	8.573		

*p<0.05

Table 5 shows the t-test results according to the educational status of the participants. No significant difference was found between the WP and SILO sub-dimensions and total scores (p>0.05).

Table 6. ANOVA results based on wp and silo scores regarding professional tenure variable

Sub-dimensions	VK	KT	sd	KO	F	p	Difference
Duty	Intergroup	1.792	3	.597	2,443	.066	-
	Intragroup	38.378	157	.244			
	Total	40.170	160				
Contextual	Intergroup	3.587	3	1.196	5.882	**.001***	1>4
	Intragroup	31.909	157	.203			
	Total	35.495	160				
WP Total	Intergroup	242.895	3	80.965	4.200	**.007***	3>2
	Intragroup	3026.906	157	19.280			
	Total	3269.801	160				
Education-Training	Intergroup	29.199	3	9.733	9.579	**.000***	3>1
	Intragroup	159.530	157	1.016			
	Total	188.729	160				
Democratic Behavior	Intergroup	8.604	3	242.895	3.460	**.018***	3>2
	Intragroup	130.153	157	.829			
	Total	138.758	160				
Autocratic	Intergroup	4.994	3	1.665	1.752	.159	-
	Intragroup	149.203	157	.950			
	Total	154.197	160				
Social Support	Intergroup	1.687	3	.562	.787	.503	-
	Intragroup	112.244	157	.715			
	Total	113.931	160				
Positive Feedback	Intergroup	11.466	3	3.822	6.160	**.001***	4>1-2
	Intragroup	97.412	157	.620			
	Total	108.878	160				
SILO Total	Intergroup	1394.361	3	464.787	5.819	**.001***	4-3>2-1
	Intragroup	12540.198	157	79.874			
	Total	13934.559	160				

*p<0.05

Tablo 6. shows the ANOVA results regarding the professional tenure of the participants . According to these data; a significant difference was found in the total scores of "Contextual" and Employee performance. In order to reveal which groups this difference was from, a post hoc analysis (Tukey) was performed as follows; In the “Contextual” sub-dimension, the average scores of the participants who have been in office for 1-5 years were found to be higher than those who have been in office for 15 years and above. In the total employee performance score, the average scores of the participants who have been in office for 11-15

years were found to be higher than those who have been in office for 6-10 years. In the findings related to SILO; a significant difference was found between the "Education and Training", "Democratic Behavior" and "Positive Feedback" sub-dimensions and the SILO total scores. The differences encountered here were as follows: in the "Education and Training" sub-dimension, those who have been in office for 11-15 years were higher than those who have been in office for 1-5 years, "Democratic Behavior" was higher than those who have been in office for 11-15 years than those who have been in office for 6-10 years, and "Positive Feedback" was higher than those who have been in office for 15 years and above than those who have been in office for 1-5 years and 6-10 years. In the SILO total score, it was found that the average scores of the participants who served for 15 years and above and those in the 11-15 year range were higher than those who served for 6-10 years and 1-5 years.

Table 7. ANOVA results based on wp and silo scores regarding coaching level variable

Sub-dimensions	VK	KT	sd	KO	F	p	Difference
Duty	Intergroup	.094	3	.031	.126	.945	-
	Intragroup	39.765	160	.249			
	Total	39.858	163				
Contextual	Intergroup	.081	3	.027	.120	.948	
	Intragroup	35.944	160	.225			
	Total	36.024	163				
WP Total	Intergroup	6.370	3	2.123	.105	.957	
	Intragroup	3247.532	160	20.297			
	Total	3253.902	163				
Education-Training	Intergroup	.854	3	.285	.238	.870	
	Intragroup	191.180	160	1.195			
	Total	192.035	163				
Democratic Behavior	Intergroup	10.773	3	3.591	4.565	**.004***	**1>2**
	Intragroup	125.879	160	.787			
	Total	136.652	163				
Autocratic	Intergroup	2.623	3	.874	.921	.432	-
	Intragroup	151.915	160	.949			
	Total	154.539	163				
Social Support	Intergroup	3.024	3	1.008	1.405	.243	-
	Intragroup	114.816	160	.718			
	Total	117.840	163				
Positive Feedback	Intergroup	2.615	3	.872	1.303	.275	
	Intragroup	107.046	160	.669			
	Total	109.661	163				
SILO Total	Intergroup	391.921	3	130.640	1.544	.205	
	Intragroup	13540.592	160	84.629			
	Total	13932.512	163				

*p<0.05

Table 7 shows the ANOVA results regarding the participants' coaching levels. According to these data, it was stated that there was a significant difference only in the "Democratic Behavior" sub-dimension (p<0.05). The difference was due to the fact that Level 1 coaches had higher scores than Level 2 coaches.

Table 8. Pearson correlation analysis results regarding the wp and silo sub-dimensions of the research group

Sub-dimensions		Duty	Contextual	WP Total
Education-Training	r	.374 **	.011	.254 **
	p	.000	.887	.001
	n	166	166	166
Democratic Behavior	r	.252 **	.039	.188 *
	p	.001	.616	.016
	n	166	166	166
Autocratic	r	-.022	.080	.027
	p	.774	.308	.731
	n	166	166	166
Social Support	r	.120	.111	.138
	p	.123	.156	.077
	n	166	166	166
Positive Feedback	r	.203 **	-.019	.124
	p	.009	.804	.111
	n	166	166	166
SILO Total	r	.288 **	.066	.225 **
	p	.000	.397	.004
	n	166	166	166

Table 8, shows the Pearson Correlation analysis results for the WP and SILO sub-dimensions of the research group. In this context, a positive medium-level relationship was found between the “Task” sub-dimension and the “Education and Training” sub-dimension, while a low-level positive relationship was found between the “Democratic Behavior”, “Positive Feedback” and “SILO” total sub-dimensions (p<0.05). A low-level positive relationship was found between the WP total score and the “Education and Training”, “Democratic Behavior” and “SILO” total sub-dimensions (p<0.05).

Discussion and Conclusion

The study was conducted to examine the relationship between the leadership characteristics of badminton coaches and employee performance. The data obtained from the responses of 166 badminton coaches participating in this study to the measurement tools were analyzed according to various variables.

No significant difference was found in the research results regarding employee performance and gender variable. In the study conducted by Mutlu (2020), no significant difference was found in the performance levels of employees both in the general performance scale and its sub-dimensions, and in the task and contextual performance sub-dimensions.

In another study investigating the effect of “managers’ ethical leadership levels on employee performance and organizational citizenship”, no significant difference was found between employee performance and gender (Kaplan, 2020). In the study conducted by Yeyrek (2018), no significant difference was found in the dimension of employee task performance based on the gender variable (Kocakabak (2011) did not find a statistically significant difference between gender and “employee performance” in the study. It is seen that the gender results of these studies conducted in different fields and with different sample groups in the literature are similar to our study and support these results.

There was no significant difference in the research results regarding the gender variable of perceived leadership for sports (SILO). According to the analysis results of the gender variable, no significant relationship was observed in the study conducted by Kandemir (2017). There was no significant difference between the leadership orientation of the coaches and the gender variable in the study conducted by Tapşın et al., (2020). In the study conducted by Çelik and Sünbül (2008), no difference was found according to the gender variable . These studies support our study. The reason for this is that it is important for all coaches, male and female, to exhibit effective leadership behavior to their athletes in order to achieve the goals they set for themselves. It can also be considered that leadership is a feature that can be developed with various training programs.

According to the employee performance of the research group, it was stated that there was a significant difference between the age variable and the "Contextual" sub-dimension . In their research, Yılmaz and Günay (2020), found a significant difference between the age variable and "employee performance". While no significant difference was found in the sub-dimensions of task performance in Öztürk (2019) research, a significant difference was obtained in the sub-dimensions of contextual performance. These studies support our research. There are also studies in the literature showing that there is no difference between age and employee performance (Borş, 2010; Aktuğ, 2016; Avcı, 2019; Özer, 2019; Mutlu, 2020; Kaplan, 2020; Karaman et al., 2020). The data obtained from these studies differ from our study.

In the data regarding SILO sub-dimensions and total scores, a low level positive relationship was found between age and the “Democratic Behavior” and “SILO Total” sub-dimensions, while a moderate level positive relationship was found between the “Education-Training” and “Positive Feedback” sub-dimensions. In the study conducted by Kılınçarslan (2013), which is parallel to our study, a significant difference was found between age and leadership characteristics. In his study conducted by Özalp (2019), on football coaches, significant differences were found between the leadership style sub-components and the age factor. Serin (2016) found no significant relationship between the age variable of boxing coaches and leadership behaviors, except for democratic behavior. These studies support our study. (Dereli, 2003; Mcardle, 2008; Aytekin, 2014; Atçı, 2018;) found significant differences in leadership orientations depending on age factors in his study and suggested that this difference develops with the age of the individual. It may be thought that these results may be due to the fact that the studies were conducted in different research groups and regions.

No significant difference was observed in the research results regarding employee performance and education status variables. Öztürk (2019), Although it was observed that there was no significant difference in the task performance sub-dimension of the participants according to the education variable, a significant difference was stated between those working in high school and above groups and those working in university and above groups. In their study regarding this, they observed that contextual performance decreased as the level of

education increased. Our findings were similar in the task performance sub-dimension but not in the context sub-dimension. Mutlu (2020), concluded in the study that employees with an associate degree had higher averages than employees with a bachelor's or graduate degree in the task performance sub-dimension. The results of this study are not similar to our study.

No significant difference was observed in the research results regarding the educational status variable of perceived leadership for sports (SILO). In the research conducted by Mutlu et al.. (2019), it was observed that there was no statistically significant difference according to the educational status variable. In the study conducted by Saraçoğlu (2022), no significant relationship was observed in the total scores of all sub-dimensions and scales in the analysis made between the leadership orientation and educational status variables of the coaches. In support of our study by Senger (2014), it was concluded that there was no significant difference between the scores of the sub-dimensions of the leadership scale of the coaches and their educational status. On the other hand, Kadak (2008), found that there was no significant difference between the educational status variable and leadership characteristics in their research. These studies are parallel to our research. Yurt, (2019), found a statistically significant difference between the education levels of the coaches and the sub-dimensions of leadership behaviors.

In the data regarding professional tenure, a significant difference was found in the total scores of "Contextual" and employee performance. As a result of the post hoc analysis (tukey) conducted to determine which groups this difference was between; the average scores of the participants who worked for 1-5 years in the "Contextual" sub-dimension were found to be higher than those who worked for 15 years and above. In the total score of employee performance, the average scores of the participants who worked for 11-15 years were found to be higher than those who worked for 6-10 years. In the research of Mutlu (2020), it was stated that there was a significant difference between the working hours and "employee performance" variables in the facilities where the employees worked. In the research conducted by Dokuzer (2018), on bank employees, significant differences were found in the overall employee performance and task performance sub-dimension.

Regarding professional tenure, significant differences were found in the SILO scale sub-dimensions, “Education and Training”, “Democratic Behavior” and “Positive Feedback” and between the SILO total scores. The differences found here were that in the “Education and Training” sub-dimension, those who had served for 11-15 years were higher than those who had served for 1-5 years; “Democratic Behavior” was higher than those who had served for 11-15 years and for 6-10 years; and “Positive Feedback” was higher than those who had served for 15 years and above and for 1-5 years and for 6-10 years. In the SILO total score, it was found that the average scores of the participants who had served for 15 years and above and between 11-15 years were higher than those who had served for 6-10 years and for 1-5 years.

In a study conducted on physical education teachers, Çelik (2014), concluded that teachers' leadership orientations differ significantly depending on their professional age. According to Kadak (2008) and Derbedek (2008), a significant difference was obtained between professional age and leadership characteristics. Öz’ün (2018), study, it was concluded that there was no difference in the sub-dimensions of leadership orientation depending on the age variable in the coaching profession.

In the data regarding the coaching level, it was stated that there was a statistically significant difference in the “Democratic Behavior” sub-dimension. It can be said that this difference is due to the fact that Level 1 coaches obtained higher scores than Level 2 coaches. In the study

conducted by Serin (2016), on boxing coaches, it was observed that there were significant differences in the democratic behavior sub-dimension, and the average scores of the second and fourth level coaches were high. This result supports our research. In the study conducted by Köksal (2007), on the leadership styles of coaches working in various branches of the General Directorate of State Youth and Sports in the Central Anatolia Region, no significant relationship was observed between educational-instructive behavior, autocratic behavior, socially supportive behavior and coercive behavior. These results are not similar to the results of our research.

Suggestions

Badminton coaches and employee performance, the following suggestions were made.

The research results presented in this study are aimed to provide data that will help various studies in the literature and organizations to estimate employee perceptions in performance management system applications. Thus, it will be possible to make more effective plans in the light of this data.

In line with our study results, it is recommended that future researchers in this field conduct research by including coaches with different demographic characteristics and different sports branches.

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Examination of The Relationship Between Entrepreneurship and Job Finding Anxiety of Students Studying in The Department of Sports Sciences in Terms of Different Variables

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Abstract

The aim of this study is to examine the relationship between entrepreneurship and job anxiety of students studying at the faculty of sports sciences in terms of different variables. 311 students studying at different departments of the faculty of sports sciences of a state university participated in the study. In the study, personal information form was used to determine demographic variables, 'entrepreneurship scale' was used to determine the entrepreneurship levels of the participants and 'job anxiety scale' was used for job anxiety levels. Data were tested with descriptive statistics, independent sample T-test, one-way analysis of variance ANOVA and Pearson correlation test. As a result of statistical analyses, it was found that the entrepreneurship levels of the participants differed in terms of gender variable, and no significant difference was found between the groups for both scales in terms of age variable, class variable and sports level variable. According to the simple correlation analysis result conducted for the relationship between entrepreneurship and job anxiety of the participants, a low-level, positive and insignificant relationship was found between the scales.

Keywords: Entrepreneurshıp, Job finding anxiety, Sport science.

Introduction

In today's world where entrepreneurship has gained great importance, it seems extremely important to identify people with entrepreneurial character and to train and guide them correctly by institutions such as universities whose primary mission is education. Universities and especially faculties of education have great responsibilities to plan and implement entrepreneurship trainings that are suitable for the needs of economic sectors. Many universities are changing their current curricula and programs to increase innovation and entrepreneurship, so that students can better understand the concepts of entrepreneurship and innovation. Entrepreneurship training in universities can have a positive effect on attitudes towards entrepreneurship. (Lekoko et al., 2012). When the relevant literature is examined, it is seen that many theories and definitions have been made to define the concepts of entrepreneur and entrepreneurship. If we touch upon some of these, according to Hisrich and Peters (2001), who have conducted many studies on the subject, an entrepreneur is someone who brings together labor, raw materials and other assets in a way that creates greater value and opportunities. According to Mueller and Thomas (2000), entrepreneurship is the activity of sensing an opportunity and creating an organization to seize that opportunity. Entrepreneurship is an important element of wealth, job creation, economic progress, technological development and social transformation (Shaker et al. 2008). Since entrepreneurship (Özden et al., 2008) has become a concept that is addressed by many different disciplines, it has brought about different definitions and discussions. These discussions include discussions on whether entrepreneurship is a profession or not and whether entrepreneurship is a continuous activity. Entrepreneurship, like any other profession, is not considered as a professional group with defined functions, duties and responsibilities; because people who are considered entrepreneurs demonstrate their entrepreneurial actions at a certain stage of their careers or at a stage related to certain parts of their work, and it is not possible for them to demonstrate this continuously (Bozkurt, 2000).

An individual who is in a constant struggle for life has to earn income in order to sustain his/her life. As a result of technological developments and globalization, youth unemployment has become an important problem in the changing and developing economic system (Akdemir and Çiçek 2022). Human beings, who are in the process of development from the past to the future, have engaged in production and consumption activities in order to sustain their existence according to the conditions of the period in every period they have lived. As a result of this situation, unemployment has inevitably become a problem of human beings. In other words, unemployment, despite having different economic and social dimensions; is a problem that affects all societies the most, from hunter/gatherer society to industrial/industrial society and today's information society, and maintains its existence and importance (Işığıçok, 2018). According to the definition made by the Turkish Statistical Institute, unemployment is the situation of a person who has not been able to find a job or is unemployed for three months despite using any of the job search methods and is in this situation (Tüik, 2025). Work is a factor that plays a role in the development of positive emotions such as success and self-actualization in terms of supporting creative thinking and developing self-esteem. Unemployment is one of the most important economic, social and political problems of all countries. When faced with unemployment and not being able to find a job for a long time, it causes negative consequences such as anxiety, increased depression and loss of self-esteem in the individual (Linn et al., 1985: 504). As a result of economic crises experienced worldwide, sometimes relief, sometimes stagnation and sometimes depression follow each other in the economy. The results of this stagnation and some economic balances related to it cause misery, social panic and problems arising from misery

worldwide. Stagnation and depression, as experienced in other countries, also affect a developing country like Turkey, which has not yet completed its industrialization, in the form of panic and anxiety. This situation causes unemployment anxiety, which is an important social problem in our country, as in various other countries (Aydin, 2022).

It is possible to come across many studies recently on the concepts of entrepreneurship and job anxiety, which is a very current issue in the field of sports as an employment area. (Dursun and Karagün, 2012; Menevşe, 2020; Demirel et al., 2016; Aktuğ and Alpay, 2015; Eti, 2022; Türkmen and İşbilir, 2014; Dallı and Pekel, 2017; Özkara, 2019). In addition Qian (2023) found that entrepreneurial training programs significantly reduced employment-related anxiety, suggesting that entrepreneurship can act as a psychological buffer against job market uncertainties. Similarly, Kasalak (2020) reported that teacher candidates often experience intense job-related stress due to limited employment opportunities, reinforcing the need for integrating entrepreneurship into pre-service education. Moreover, studies in the field of sports sciences have emphasized the rising employment-related concerns among students and the role of entrepreneurship in mitigating them. For instance, Kaçay et al. (2023) observed that sport sciences students frequently worry about career prospects and perceive entrepreneurship as a potential path to professional autonomy. However, literature also reflects contradictions in how variables like gender or academic standing influence entrepreneurial tendencies and job anxiety (Yumuşaker & Kıllı, 2023; Tuncer & Tanaş, 2022). These mixed findings highlight the importance of exploring these constructs together. Our study aims to contribute to the existing literature from different perspectives.

Within this conceptual framework, the aim of this research is to examine the relationship between entrepreneurship and job anxiety of students studying at the faculty of sports sciences in terms of different variables.

Material and Method

The study was designed with a survey model and data was collected from participants using a reliable and valid scale. Survey studies are a unique way to collect information from a large group. Despite the widespread perception that this type of research is easy to conduct, a survey requires extensive planning, time, and effort to obtain meaningful results (Jones et al., 2013).

Ethics Committee Permission

The research group was informed about the research, and to athletes who participated in the study signed a consent form containing information about the purpose and methods of the study. Ethical approval for this study was obtained from the Kırşehir Ahi Evran University Social and Human Sciences Scientific Research and Publication Ethics Committee on 26.02.2025 with decision number 2025/04/03.

Universe and Sample

311 students studying in different departments of the faculty of sports sciences at a state university participated in the study. It has been stated that the sample size should be at least five times the number of items, or even around ten times (Bryman and Cramer 2001). Comrey and Lee defined the sample size as 100 as poor, 200 as medium, 300 as good, 500 as very good, and 1000 as excellent (Comrey and Lee, 1992).

Data Collection Tools

A personal information form to determine demographic variables, the ‘entrepreneurship scale’ developed by Yılmaz and Sünbül (2009) to determine the entrepreneurial characteristics of

students, and the 'job anxiety scale' to determine the job anxiety levels of participants, the validity and reliability of which were conducted by Aslan and Uğraş (2021), were used as data collection tools in the study.

Entrepreneurship Scale

In order to determine the entrepreneurial characteristics of the students, the "Entrepreneurship Scale" developed by Brown and Ryan (2003) and adapted to Turkish by Yılmaz and Sünbül (2009) and its validity and reliability were performed was used. The number of items on the scale is 36 and it is arranged in the form of a 5-point Likert-type scale ranging from "(5) Very often" to "(1) Never". The score range of the scale varies between 36-180. As a result of the factor analyses, it was seen that the scale has a one-dimensional structure. In our research, the Crobach Alpha Coefficient of the scale was determined to be 0.718.

Employment Anxiety Scale

The scale, the validity and reliability of which was performed by Aslan and Uğraş (2021), consists of one-dimensional and 8 items. The scale is scored as 1= never true…… 5= always true. An increase in the total score indicates that the anxiety levels of the participants increase. There is no item in the scale that needs to be reverse coded. The scale has a one-dimensional structure and it can be stated that the anxiety level of the individual increases as the total score approaches 40 points. As a result of the reliability analyses performed by Aslan and Uğraş (2021), it was determined that the alpha reliability coefficient was 0.95. While in this study, Crobach Alpha Coefficient was found to be 0.773.

Data Analysis

In order to determine the tests to be used in the analysis of the data, in addition to the kurtosis and skewness values, Kolmogorov-Smirnov, Histogram, Plot Graphics and Missing data and extreme value analyses were performed and examined. (George and Mallery, 2019) evaluates the ±2 range as acceptable for the normality assumption. As a result of all these evaluations, it is seen that the data meets the normality assumption (Table 1).

Table 1. Reliability and skewness-kurtosis table of the scales

Scale	Skewness	Kurtosis	Cronbach's Alpha
Entrepreneurship Scale	-.503	.079	0.718
Employment Anxiety Scale	-.499	-1.546	0.773

Findings

Table 2. Descriptive statistics of participants

Variables	Sub Variables	f	%
Gender	Female	153	49.2
	Male	158	50.8
Age	18-20	114	36.7
	21-23	141	45.3
	24 and above	56	18.0
Class	1. Class	64	20.6
	2. Class	51	16.4

	3. Class	111	35.7
	4. Class And extended	85	27.3
Sports Level	I Don't Do Sports	61	19.6
	Professional	66	21.2
	Amateur	85	27.3
	Recreational	99	31.8

Table 3. T-test results for the entrepreneurship levels and job search anxiety of the participants according to the gender variable.

Scale	Gender	n	x	ss	sd	t	p
Entrepreneurship Scale	Male	153	133.0523	13.14033	309	-2.612	**.010**
	Female	158	136.7785	12.00988			
Employment Anxiety Scale	Male	153	22.1503	4.87309	309	-.627	.533
	Female	158	22.4684	4.05012			

While the entrepreneurship levels of the participants differed significantly according to the gender variable, their concerns about finding a job did not differ significantly.

Table 4. Anova test results for the entrepreneurship levels and job search anxiety of the participants according to their age variable

Scale	Age	n	x	ss	f	p	Significant difference
Entrepreneurship Scale	18-20	114	134.2018	13.60061	1.948	.144	----
	21-23	141	136.4043	11.86049			
	24 and above	56	132.7857	12.61271			
Employment Anxiety Scale	18-20	114	22.8246	4.71722	1.224	.295	-----
	21-23	141	22.0709	4.74138			
	24 and above	56	21.8750	2.96073			

According to the average scores obtained from the participants' entrepreneurship levels and job anxiety scales, no significant difference was observed in terms of age variable in both scales.

Table 5. Anova test results for the participants' entrepreneurship levels and job anxiety according to the class variable

Scale	Sınıf	n	x	ss	f	p	Significant difference
Entrepreneurship Scale	1. Class	64	135.5000	12.81740			
	2. Class	51	135.6667	11.30428			

	3. Class	111	133.6757	13.32882	.578	.630	----
	4. Class And extended	85	135.7529	12.63395			
Employment Anxiety Scale	1. Class	64	22.6719	4.25032			
	2. Class	51	21.8039	4.09399	.422	.737	----
	3. Class	111	22.4505	4.32065			
	4. Class And extended	85	22.1647	5.04467			

According to the averages obtained from the participants' entrepreneurship levels and job anxiety scale scores, no significant difference was observed in both scales in terms of the class variable.

Table 6. Anova test results for entrepreneurship levels and job search anxiety of the participants according to the sports level variable

Scale	**Sports Level**	**n**	**x**	**ss**	**f**	**p**	**Significant difference**
Entrepreneurship Scale	I Don't Do Sports	61	133.3443	12.97419			
	Professional	66	134.4697	13.07872	.557	.644	----
	Amateur	85	135.8824	12.57682			
	Recreational	99	135.4444	12.45172			
Employment Anxiety Scale	I Don't Do Sports	61	21.7213	4.00471			
	Professional	66	23.4394	4.94004	2.239	.084	----
	Amateur	85	21.7529	3.56540			
	Recreational	99	22.4040	4.99371			

According to the averages obtained from the participants' entrepreneurship levels and job anxiety scale scores, no significant difference was observed in both scales in terms of the sports level variable.

Table 7. Correlation analysis results regarding the relationship between the entrepreneurship levels of the participants and their job search anxiety levels.

Scale	**n**	**x**	**ss**	**r**	**p**
Entrepreneurship Scale	311	134.9453	12.69621	.070	.218
Employment Anxiety Scale	311	22.3119	4.46952		

According to the correlation analysis results regarding the relationship between the participants' entrepreneurship levels and job anxiety levels, a low-level, positive and insignificant relationship was found between the scales (P>0.05).

Discussion and Conclusion

This study aims to examine the entrepreneurship levels and job anxiety levels of students studying at the faculty of sports sciences in terms of different variables and to reveal the relationships between them. The findings obtained from our research show that the participants have high levels of entrepreneurship characteristics and at the same time, they have low levels of anxiety about finding a job. Nas and Temel (2018) concluded that the entrepreneurship levels of the students of the physical education and sports school are high in their studies. This study is parallel to our current study in terms of its results. Again, the study conducted by İşcan and Kaygın (2011) is parallel to our study, while the study conducted by Bilge and Bal (2012) does not overlap with our study. The authors' findings indicate that the participants have low levels of entrepreneurship characteristics.

According to the research results, the entrepreneurship scores of the participants differ significantly according to the gender variable, while the job anxiety scores did not differ significantly according to the gender variable. The entrepreneurship level of the participants differed significantly in favor of the female participants according to the gender variable. When the literature is examined, different results regarding the level of entrepreneurship are observed in terms of gender variable. In their study titled “Examination of entrepreneurial tendencies of university students in terms of socio-demographic characteristics”, Türkmen and İşbilir (2014) state that the entrepreneurship levels of male participants are higher than female participants. This study differs from our study in terms of its findings. Again, Kılıç and Özer (2007); Şeşen and Basım (2012) report that the entrepreneurship tendencies of male participants are higher than female students.

Bilge and Bal (2012) and Özdemir (2013) stated that there was no significant difference between entrepreneurship tendencies according to gender in their studies on university students. According to our findings, the job anxiety scores of the participants did not differ significantly according to gender. Demirci (2020) stated in his study that the job anxiety of the participants did not change according to gender. This study is parallel to our study in terms of its results. Yılmaz and Caz (2022) concluded in their study that the gender variable created a significant difference on job anxiety. The study differs from our study in terms of its findings.

According to our findings, the entrepreneurship levels and job anxiety levels of the participants in terms of their age variable did not differ significantly. In parallel with our study, Nas and Temel (2018) stated that there was no significant difference in the entrepreneurship levels of the participants in terms of their age variable. Again, in a study examining the entrepreneurship characteristics of students of the faculty of sports sciences, Yıldız and Karataş (2024) stated that there was no significant difference in the entrepreneurship levels in terms of the age variable. Bahar et al. (2019) and Şenel et al. (2020) reached similar findings. These studies contain similar results to our study. In the study conducted by Şeşen and Basım (2012) on sports science students, a significant difference was observed between the groups in terms of the age variable. This study differs from our study in terms of its findings. According to our findings, the job anxiety scores of the participants did not differ significantly according to their age. The study conducted by Yumuşaker and Kıllı

(2023) is parallel to our study in terms of its results. The authors state that the age status of the participants did not affect job anxiety. Unlike our study, Aksüt and Duman (2024) reported that the job anxiety of the participants differed significantly according to the age variable. This study differs from our study in terms of its results.

According to our research results, the averages obtained from the participants' entrepreneurship levels and job anxiety scale scores indicate that there is no significant difference in terms of the class variable in both scales. In parallel with our study, Doğaner and Altunoğlu (2010) reported that there was no difference in terms of entrepreneurship level when comparing the 1st and 4th grades. This study is consistent with our study in terms of its results. In addition, when the relevant literature is examined, Nas and Temel (2018) stated that they found a significant difference in terms of the students' entrepreneurship level according to the class variable, unlike these findings. The authors found that 4th grade students had considerably higher entrepreneurship scores than 1st, 2nd, and 3rd grade students. In addition, the researchers attribute this situation to the fact that the students are at the graduation stage and will then enter working life. The study results are inconsistent with our study. Sarıkol and Hoşver (2023) reported that there is a significant difference between the class variable and the total score average of the job anxiety scale. The authors state that as the grade level increases, the job anxiety levels of university students increase. Again, Dursun and Aytaç (2009) stated in their study that the anxiety levels of the future and finding a job in senior university students negatively affect the hopelessness and anxiety levels of the students and that the prevalence of unemployment among educated young people in Turkey increases the anxiety levels of senior university students. These studies differ from our study in terms of their results. Our findings show that according to the averages obtained from the participants' entrepreneurship levels and job anxiety scale scores, there is no significant difference in terms of the level of doing sports variable in both scales. Karataş (2018) reported in his study that there is no statistically significant difference between the entrepreneurship score averages according to the variable of actively doing sports (licensed). This study is parallel to our study in terms of its results. Şimşek and Yüksel (2023) found statistically significant differences in the total score of job anxiety, discrimination, helplessness and employment inadequacy sub-dimensions depending on the sports variable of the participants in a study conducted on students of the faculty of sports sciences. Our findings differ from this study in terms of their results.

According to our research results, according to the correlation analysis results conducted on the relationship between the entrepreneurship levels and job anxiety levels of the participants, a low-level, positive and insignificant relationship was found between the scales (r=-.070). The entrepreneurship levels and job anxiety of the participants are not related according to the obtained data. When the relevant literature is examined, we see different findings. Tuncer and Tanaş (2022) reported in their study that the job anxiety of the participants is significantly, negatively and weakly related to their entrepreneurship scores. Gültekin et al. (2019) reported in their research that there is a negative relationship between entrepreneurship levels and job anxiety. These studies differ from our study in terms of their results.

It is hoped that the results obtained in our research will contribute to other research activities to be conducted on entrepreneurship and job anxiety and provide researchers with different perspectives. In addition, studies to be conducted in different cultural environments and on different sample groups will contribute to the relevant literature with different results. In addition, studies can be carried out to explore the entrepreneurial aspects of individuals and to discover their new talents, thus providing assistance to them in terms of job and career concerns.

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ATHLETES' STATE ANXIETY LEVELS AND THEIR ABILITY TO DEAL WITH STRESS BEFORE THE COMPETITION IN SNOWBOARDING

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Abstract

This study aims to reveal the relationships between the state anxiety levels and stress coping skills of athletes before the competition in snowboarding and various variables. The study was conducted using the screening method, which is one of the quantitative research techniques. The data of our study consists of three sections: Demographic Information of Snowboarders, State Anxiety Inventory and Stress Coping Scale. The universe of this study consists of 158 snowboarders, 49 female and 109 male, in the age groups of U11, U13, U15, +15, out of 250 snowboarders licensed in the Turkish Ski Federation. As a result of determined that the state anxiety and stress coping levels of athletes differed according to their gender, and it was determined that the helpless approach sub-dimension of stress coping differed according to gender and that the helpless approach sub-dimension levels of men were higher than those of women. Another result that the optimistic approach sub-dimension of stress coping of athletes differed according to age. In the study, as a result of the difference analysis of the levels of state anxiety and coping with stress according to their weight, it was determined that the levels of self-confident approach to coping with stress differed according to their weight. It was determined that there was a positive and moderate relationship with the helpless approach sub-dimension levels of the state anxiety and coping with stress scale, and a positive and low-level relationship with the submissive approach sub-dimension levels of the state anxiety and coping with stress scale.

Keywords: Anxiety, Coping with stress, Snowboard, Athletes

Introduction

Snowboarding is a recreational activity that involves descending a snow-covered slope while standing on a board attached to the bottom of a person's feet, and is also an Olympic and Paralympic sport. It continues to develop itself by taking inspiration from skateboarding, surfing and skiing. Snowboarding has become a popular and popular sport among athletes all over the world.

Snowboarding is a sport that is more difficult to learn and requires time compared to skiing. There are many types of competitions in snowboarding. In these competitions, athletes generally compete individually. In order to complete the difficult courses in snowboarding competitions in the fastest way and in accordance with the competition rules, it is necessary to be agile and to develop the ability to change direction. These athletes need training applications specific to the snowboarding branch. As in many sports branches, athletes in snowboarding also need jumping, leg and body strength, technical skills specific to the sport and super coordination (Sevim, 2007).

Recently, economic developments in sports and the intense interest of society in sports have been increasing. This also causes some pressure on athletes. For this reason, athletes need to make an effort to prepare themselves psychologically and physically for competitions. Of course, these factors are not enough to win competitions. Because the anxiety and stress levels of athletes before and during the competition are also important factors that seriously affect the results of the competition (Morali and Tiryaki, 1990, 5). Anxiety is a multifaceted emotional state. In addition, anxiety is a normal reaction and can be beneficial in some cases. The emergence of this feeling includes cognitive elements and emotions such as the possibility of danger and the situation of coping with this danger. Physiological and psychological symptoms such as sweating, feeling restless and tense, rapid heartbeat, negative situations in your environment, may show behaviors such as active escape or passive avoidance (Civan, 2001).

Stress is a situation that occurs when the physical and mental limits of the organism are pushed and threatened. It can also lead to feelings such as disappointment, fear, anxiety, anger or depression. Stress can arise from our normal life or a situation such as an illness. Long-term stress or high levels of stress can also lead to a number of mental and physical health problems (Tiryaki, 2000). For these reasons, in this research, we examined many situations such as how and in what situations anxiety and stress occur, how we should cope, what are the symptoms and results. It will also make an important contribution to the studies on snowboarding, which are few in the literature in our country. In addition, it is aimed to examine and reveal the pre-competition anxiety levels of snowboarders and their coping with stress, which is our hypothesis. Depending on this purpose, do snowboarders show significant differences in terms of variables such as age, gender, educational status, height, weight, snowboarding experience, weekly training duration, being a national athlete or not and family income level? Answers to the problems were sought based on the main research problem.

Method and Material

In this section, explanations regarding the research model, universe and sample, data collection and analysis are included.

Ethics Committee Permission

The research was implemented after the ethics committee decision of Kafkas University dated 01.07.2021 and numbered 2021/18 was obtained.

Method of the Research

The study was conducted using the quantitative research method, which is a research method in which measurement methods and observations can be repeated and are carried out with numerical research. The research was conducted using the scanning method, which is one of the quantitative research techniques and aims to describe the facts and events within their own conditions and as they are. Scanning studies vary due to the fact that many factors such as time, interest, incentive, attitude, etc. play a role in the process of participants on a subject. These changes can be expressed as studies applied on larger samples (Karasar 2015).

Universe and Sample

The universe of this research was formed by the participation of snowboard athletes randomly selected as male and female in the age groups of U11, U13, U15, +15 throughout Turkey. The sample of the research was formed by those who participated in snowboard competitions held in Kayseri and Erzurum on different dates during the period in question and who filled out the questionnaires completely and using the formula,

$n= (N\ t^2\ p\ q) / (d^2(N-1)+ t^2\ p\ q)$

$p = 0.50$

$q = l-p=0.50,$

$t = 1.96,$

$S\ (d) = 0.03$ by taking 4

It consisted of 158 athletes.

Assumptions of the Study

It is assumed that the sample in the study represents the universe, the data collection tools meet the purpose of the study, and the opinions expressed by the participants regarding the statements in the scales are accurate and sincere.

Limitations of the Study

The sample of participants included in the study was comprised of 158 snowboarders, and the opinions expressed by these athletes on the "state anxiety" and "coping with stress" scales used as scales.

Data Collection Tools

In our research, the "State Anxiety Inventory", "Stress Coping Scale" and "Personal Information Form" were used to examine the pre-competition state anxiety levels and stress coping of athletes who will compete in the Snowboard stage competitions and the Turkish Championship. Before the surveys were applied, general information about the surveys was given to the athletes.

State Anxiety Inventory

The original inventory was developed by Spielberger and Charles in 1970. The adaptation of the inventory to Turkish was done by Öner and Le Compte in 1985. The inventory consists of 20 questions with 4 Likert scales. The internal consistency values of the inventory are between .94 and .96. There are reverse coded items in the inventory. The responses of the

participants to the items in the inventory are; "1 indicates that the anxiety level is low, while 4 indicates that the anxiety level is high."

In line with the obtained data, it was determined that the normality distribution Skewness-Kurtosis values of the data obtained from the State Anxiety Scale were between -1.5 ~ +1.5 and the distribution was normal.

Stress Coping Scale

The original scale is a 4-point Likert-type scale developed by Folkman and Lazarus as an inventory. The scale was adapted to Turkish by Şahin and Duran in 1995. The scale consists of 30 items with 4 Likert-type scales. The scale has 5 sub-dimensions. The sub-dimensions of the scale are; "self-confident approach, "helpless approach, "submissive approach "optimistic approach and "seeking social support. The internal consistency coefficient of the scale was reported to be between ".49-.68 for optimistic approach", ".62-.80 for self-confident approach", ".64-.73 for helpless approach", ".47-.72 for submissive approach" and ".45-.47 for seeking social support".

Coping with Stress Scale Normality Distribution Test As a result of the analysis, it was determined that the Skewness-Kurtosis (Skewness-Kurtosis) values indicating normality distribution were between -1.5 ~ +1.5 and the distribution was normal.

Analysis of Data

While evaluating the findings obtained in the study, SPSS 22.0 Statistical package program was used for statistical analysis. Descriptive statistical methods (Frequency, Percentage, Average, Standard deviation) were used while evaluating the study data. The relationship between state anxiety and stress coping scales was examined with correlation analysis. In the case of two groups in comparing quantitative data, independent samples t test was used in the comparison of normally distributed parameters between groups, in the case of more than two groups in comparing quantitative data, one way Anova test was used in the comparison of normally distributed parameters between groups and Tukey test was used to determine the group causing the difference. The results were evaluated at a 95% confidence interval and at a significance level of $p<0.05$.

FINDINGS

Findings Regarding Personal Information

Table 1. Distribution according to weekly training duration

	Frequency	Percentage	Variable Percentage	Cumulative Percentage
5 hours and under	34	21.5	21.5	21.5
6-9 Hours	62	39.2	39.2	60.8
10-13 Hours	35	22.2	22.2	82.9
14 Hours and above	27	17.1	17.1	100.0
Total	158	100.0	100.0	

Participants' question on how many hours do they train per week is as follows; 39.2% (62 people) 6-9 hours, 22.2% (35 people) 10-13 hours, 21.5% (34 people) 5 hours and below, 17.1% (27 people) 14 hours and above.

Table 2. Distribution according to national team athlete status

	Frequency	Percentage	Variable Percentage	Cumulative Percentage
A national	5	3.2	3.2	3.2
B national	4	2.5	2.5	5.7
C national	7	4.4	4.4	10.1
Not national	142	89.9	89.9	100.0
Total	158	100.0	100.0	

Participants are seen as 89.9% (142 people) Not National, 4.4% (7 people) C National, 3.2% (5 people) A National, 2.5% (4 people) B National according to their status as national team athletes.

Table 3. Difference analysis of state anxiety and coping with stress levels according to gender

	Gender	N	Mean	T	Sig.P
State Anxiety	Female	49	48.2642	-0.473	0.637
	Male	109	48.3445		
Confident Approach	Female	49	3.4752	0.595	0.553
	Male	109	3.4220		
Optimistic Approach	Female	49	3.2939	-0.320	0.750
	Male	109	3.3284		
Helpless Approach	Female	49	1.7245	-2.324	**0.022**
	Male	109	1.9495		
Submissive Approach	Female	49	1.6327	-1.863	0.065
	Male	109	1.7813		
Social Support Seeking	Female	49	2.5034	0.190	0.850
	Male	109	2.4709		
General Stress Coping Level	Female	49	2.4792	-1.746	0.085
	Male	109	2.5618		

The analysis of differences in the participants' state anxiety and coping with stress levels according to their gender was examined with Independent T-Test. As a result of the analysis, it was determined that the helpless approach sub-dimension of coping with stress differed according to gender and that men had higher levels of the helpless approach sub-dimension than women (Sig.p.< 0.05).

Table 4. Difference analysis of state anxiety and coping with stress levels according to age

		N	Mean	Std. Deviation	F	Sig.P
State Anxiety	9-12 Years	38	48.1456	.81955	1.039	0.377

	13-16 Years	78	48.3289	.98935		
	17-20 Years	34	48.5359	1.17385		
	21 Years and above	8	48.1361	.69667		
	Total	158	48.3196	.98430		
Self-Confident Approach	9-12 Years	38	3.2556	.68806	2.563	0.057
	13-16 Years	78	3.4524	.49295		
	17-20 Years	34	3.5714	.37878		
	21 Years and above	8	3.6071	.44361		
	Total	158	3.4385	.53211		
Optimistic Approach	9-12 Years*	38	3.1947	.70747	3.445	**0.018**
	13-16 Years*	78	3.2718	.54508		
	17-20 Years**	34	3.4412	.47681		
	21 Years and above**	8	3.8250	.27124		
	Total	158	3.3177	.57954		
Desperate Approach	9-12 Years	38	1.9079	.64179	0.473	0.701
	13-16 Years	78	1.9167	.62017		
	17-20 Years	34	1.7978	.52134		
	21 Years and above	8	1.7344	.76309		
	Total	158	1.8797	.61007		
Submissive Approach	9-12 Years	38	1.8640	.47276	1.750	0.159
	13-16 Years	78	1.7158	.53257		
	17-20 Years	34	1.6078	.43978		
	21 Years and above	8	1.8542	.58035		
	Total	158	1.7352	.50585		
Seeking Social Support	9-12 Years	38	2.5702	.95831	0.629	0.597
	13-16 Years	78	2.3761	.96004		
	17-20 Years	34	2.5686	1.00681		
	21 Years and above	8	2.7083	1.27786		
	Total	158	2.4810	.98286		
General Stress Coping Level	9-12 Years	38	2.5145	.24335	0.906	0.440
	13-16 Years	78	2.5270	.27980		
	17-20 Years	34	2.5497	.21742		
	21 Years and above	8	2.6724	.22947		
	Total	158	2.5362	.25647		

The difference analysis of the participants' state anxiety and coping with stress levels according to their ages was examined with One-Way ANOVA Test. As a result of the analysis, it was determined that the optimistic approach sub-dimension of coping with stress differed according to age (Sig.p.< 0.05). As a result of the post-hoc (Tukey test) analysis performed to determine which age groups caused the difference, it was determined that the optimistic approach sub-dimension levels of the participants aged 17-20 and 21 and above were higher than the participants aged 9-12 and 13-16.

Table 5. Difference analysis of state anxiety and coping with stress levels according to educational status

	N	Mean	Std. Deviation	F	Sig.P

State Anxiety	Elementary School	7	48.1143	1.25242	0.841	0.473
	Middle School	72	48.2540	.93776		
	High School	64	48.4613	1.07373		
	Undergraduate	15	48.1259	.60802		
	Total	158	48.3196	.98430		
Self-Confident Approach	Elementary School	7	3.3469	.64869	2.547	0.058
	Middle School	72	3.3373	.62122		
	High School	64	3.5000	.41279		
	Undergraduate	15	3.7048	.34770		
	Total	158	3.4385	.53211		
Optimistic Approach	Elementary School	7	3.1143	.78194	2.524	0.060
	Middle School	72	3.2333	.60047		
	High School	64	3.3594	.55455		
	Undergraduate	15	3.6400	.33975		
	Total	158	3.3177	.57954		
Desperate Approach	Elementary School	7	1.6071	.67093	2.217	0.088
	Middle School	72	1.9549	.60779		
	High School	64	1.8984	.61192		
	Undergraduate	15	1.5667	.49970		
	Total	158	1.8797	.61007		
Submissive Approach	Elementary School	7	1.5714	.30211	1.437	0.234
	Middle School	72	1.8171	.52642		
	High School	64	1.6953	.48755		
	Undergraduate	15	1.5889	.52654		
	Total	158	1.7352	.50585		
Seeking Social Support	Elementary School	7	2.1429	1.05158	0.687	0.561
	Middle School	72	2.4861	.96079		
	High School	64	2.4479	.94881		
	Undergraduate	15	2.7556	1.21803		
	Total	158	2.4810	.98286		
General Stress Coping Level	Elementary School	7	2.3350	.20758	1.609	0.190
	Middle School	72	2.5354	.26331		
	High School	64	2.5517	.25198		
	Undergraduate	15	2.5678	.24378		
	Total	158	2.5362	.25647		

The difference analysis of the participants' state anxiety and coping with stress levels according to their educational status was examined with One-Way ANOVA Test. As a result of the analysis, it was determined that the levels of state anxiety and coping with stress did not differ according to their educational status (Sig.p.> 0.05).

Table 6. Difference analysis of state anxiety and coping with stress levels according to height

		N	**Mean**	**Std. Deviation**	**F**	**Sig.P**
State Anxiety	130 cm. and below*	19	47.7532	.53302	3.255	**0.023**
	131 cm. and 150 cm.	39	48.2117	.83896		
	151 cm. -170 cm. below**	61	48.4271	1.01580		
	171 cm. and above**	39	48.5353	1.13863		
	Total	158	48.3196	.98430		

Self-Confident Approach	130 cm. and below*	19	3.8271	.35819	10.468	**0.000**
	131 cm. and 150 cm.*	39	3.1245	.64405		
	151 cm. -170 cm. below*	61	3.4262	.46254		
	171 cm. and above**	39	3.5824	.39788		
	Total	158	3.4385	.53211		
Optimistic Approach	130 cm. and below**	19	3.8000	.35277	9.659	**0.000**
	131 cm. and 150 cm. between*	39	3.0308	.62330		
	151 cm. -170 cm. below*	61	3.2721	.57623		
	171 cm. and above**	39	3.4410	.44291		
	Total	158	3.3177	.57954		
Desperate Approach	130 cm. and below*	19	1.4934	.42384	3.440	**0.018**
	131 cm. and 150 cm. between**	39	2.0128	.57482		
	151 cm. -170 cm. below**	61	1.9262	.62265		
	171 cm. and above	39	1.8622	.64303		
	Total	158	1.8797	.61007		
Submissive Approach	130 cm. and below	19	1.5351	.40665	2.542	0.058
	131 cm. and 150 cm.	39	1.8889	.45777		
	151 cm. -170 cm. below	61	1.7459	.54058		
	171 cm. and above	39	1.6624	.50796		
	Total	158	1.7352	.50585		
Seeking Social Support	130 cm. and below	19	1.9123	1.24644	2.479	0.063
	131 cm. and 150 cm.	39	2.5641	.80624		
	151 cm. -170 cm. below	61	2.5574	.91433		
	171 cm. and above	39	2.5556	1.04946		
	Total	158	2.4810	.98286		
General Stress Coping Level	130 cm. and below	19	2.5064	.16217	0.968	0.409
	131 cm. and 150 cm.	39	2.4881	.27874		
	151 cm. -170 cm. below	61	2.5483	.28139		
	171 cm. and above	39	2.5800	.22707		
	Total	158	2.5362	.25647		

The difference analysis of the participants' state anxiety and coping with stress levels according to their heights was examined with One-Way ANOVA Test. As a result of the analysis, it was determined that the state anxiety and coping with stress levels differed according to their heights (Sig.p. < 0.05). As a result of the post-hoc (Tukey test) analysis performed to determine which height groups the difference originated from,

• The state anxiety levels of the participants whose heights are 151-170 cm. and 171 cm. and above were higher than the participants whose heights are 130 cm and below,

• The self-confident approach to coping with stress sub-dimension levels of the participants whose heights are 151-170 cm. and above were higher than the other participants,

• The optimistic approach to coping with stress sub-dimension levels of the participants whose heights are 130 cm and below and 171 cm and above were higher than the other participants,

• The optimistic approach to coping with stress sub-dimension levels of the participants whose heights are 131-150 cm. and 151-170 cm. It was determined that the levels of the helpless approach to coping with stress sub-dimension of the participants whose height was between 130 cm and below were higher than the participants who were 130 cm and below.

Table 7. Difference analysis of state anxiety and coping with stress levels according to weight

	N	Mean	Std. Deviation	F	Sig.P

State Anxiety	49 kg. and below	67	48.1867	.96976	1.145	0.333
	50-60 kg.	47	48.4887	1.12994		
	61-70 kg.	18	48.5006	.90402		
	71 kg. and above	26	48.2312	.75089		
	Total	158	48.3196	.98430		
Self-Confident Approach	49 kg. and below	67	3.3923	.60012	3.469	**0.018**
	50-60 kg.*	47	3.3131	.49901		
	61-70 kg.	18	3.5873	.48727		
	71 kg. and above**	26	3.6813	.30854		
	Total	158	3.4385	.53211		
Optimistic Approach	49 kg. and below	67	3.2299	.66356	3.563	0.420
	50-60 kg.	47	3.2213	.52459		
	61-70 kg.	18	3.5556	.47801		
	71 kg. and above	26	3.5538	.38495		
	Total	158	3.3177	.57954		
Desperate Approach	49 kg. and below	67	1.8172	.60000	2.786	0.470
	50-60 kg.	47	2.0878	.64422		
	61-70 kg.	18	1.7431	.54985		
	71 kg. and above	26	1.7596	.54535		
	Total	158	1.8797	.61007		
Submissive Approach	49 kg. and below	67	1.7413	.49686	0.744	0.527
	50-60 kg.	47	1.8050	.54542		
	61-70 kg.	18	1.6852	.48470		
	71 kg. and above	26	1.6282	.47448		
	Total	158	1.7352	.50585		
Seeking Social Support	49 kg. and below	67	2.4975	1.04184	0.192	0.902
	50-60 kg.	47	2.4184	.83541		
	61-70 kg.	18	2.4259	1.04040		
	71 kg. and above	26	2.5897	1.07624		
	Total	158	2.4810	.98286		
General Stress Coping Level	49 kg. and below	67	2.4956	.26033	1.094	0.353
	50-60 kg.	47	2.5547	.27781		
	61-70 kg.	18	2.5594	.21601		
	71 kg. and above	26	2.5915	.22763		
	Total	158	2.5362	.25647		

The difference analysis of the participants' state anxiety and stress coping levels according to their weight was examined with One-Way ANOVA Test. As a result of the analysis, it was determined that the levels of self-confident approach to coping with stress differed according to their weight (Sig.p. < 0.05). As a result of the post-hoc (Tukey test) analysis performed to determine which weight groups caused the difference, it was determined that the participants weighing 71 kg and above had higher levels of self-confident approach to coping with stress than the participants weighing 50-60 kg.

Table 8. Difference analysis of state anxiety and stress coping levels according to snowboard age category

		N	**Mean**	**Std. Deviation**	**F**	**Sig.P**
State Anxiety	U-11	22	47.9889	.84869	2.511	0.061
	U-13	48	48.2197	.96853		
	U-15	36	48.6614	.89256		
	+15	52	48.3152	1.06566		
	Total	158	48.3196	.98430		

Self-Confident Approach	U-11	22	3.4286	.73771	2.276	0.082
	U-13	48	3.3185	.58140		
	U-15	36	3.3929	.47365		
	+15	52	3.5852	.38087		
	Total	158	3.4385	.53211		
Optimistic Approach	U-11	22	3.2818	.79919	4.400	**0.005**
	U-13	48	3.2833	.53129		
	U-15*	36	3.0889	.56658		
	+15**	52	3.5231	.45702		
	Total	158	3.3177	.57954		
Desperate Approach	U-11*	22	1.6307	.57019	2.978	**0.033**
	U-13	48	1.9635	.59192		
	U-15**	36	2.0521	.63764		
	+15	52	1.7885	.58919		
	Total	158	1.8797	.61007		
Submissive Approach	U-11	22	1.7576	.47623	1.109	0.347
	U-13	48	1.7604	.45986		
	U-15	36	1.8287	.62677		
	+15	52	1.6378	.46174		
	Total	158	1.7352	.50585		
Seeking Social Support	U-11	22	2.3485	1.07140	0.312	0.817
	U-13	48	2.4583	1.00970		
	U-15	36	2.4537	.85134		
	+15	52	2.5769	1.02287		
	Total	158	2.4810	.98286		
General Stress Coping Level	U-11	22	2.4498	.24067	1.220	0.304
	U-13	48	2.5273	.27300		
	U-15	36	2.5498	.28885		
	+15	52	2.5716	.21908		
	Total	158	2.5362	.25647		

The difference analysis of the participants' state anxiety and coping with stress levels according to the snowboarding age category was examined with One-Way ANOVA Test. As a result of the analysis, it was determined that the levels of the optimistic approach and helpless approach sub-dimensions of coping with stress differed according to the snowboarding age category (Sig.p. < 0.05). As a result of the post-hoc (Tukey test) analysis performed to determine which categories caused the difference, it was determined that the participants in the over 15 age category had higher levels of the optimistic approach sub-dimension of coping with stress than the participants in the U-15 age category, and the helpless approach sub-dimension of coping with stress of the participants in the U-15 age category was higher than the participants in the U-11 age category.

Table 9. Difference analysis of state anxiety and coping with stress levels according to snowboarding duration

		N	**Mean**	**Std. Deviation**	**F**	**Sig.P**
State Anxiety	0-3 years	32	48.5639	1.22890	0.928	0.449
	4-7 years	85	48.2444	.91168		
	8-11 years	35	48.3403	.95863		
	12-15 years	4	47.7722	.12256		
	16 years and above	2	48.3389	.76210		
	Total	158	48.3196	.98430		
Self-Confident Approach	0-3 years*	32	3.1473	.68318	5.086	**0.001**
	4-7 years	85	3.4319	.48844		

	8-11 years**	35	3.6571	.36701		
	12-15 years	4	3.8214	.21429		
	16 years and above	2	3.7857	.10102		
	Total	158	3.4385	.53211		
Optimistic Approach	0-3 years*	32	3.0563	.66086	3.724	**0.006**
	4-7 years	85	3.3106	.56611		
	8-11 years**	35	3.5143	.46345		
	12-15 years	4	3.8500	.30000		
	16 years and above	2	3.3000	.14142		
	Total	158	3.3177	.57954		
Desperate Approach	0-3 years	32	1.9961	.71736	1.757	0.140
	4-7 years	85	1.9074	.59266		
	8-11 years	35	1.7893	.54803		
	12-15 years	4	1.2188	.15729		
	16 years and above	2	1.7500	.35355		
	Total	158	1.8797	.61007		
Submissive Approach	0-3 years	32	1.7656	.48241	0.901	0.465
	4-7 years	85	1.7784	.54335		
	8-11 years	35	1.6381	.42872		
	12-15 years	4	1.4167	.31914		
	16 years and above	2	1.7500	.82496		
	Total	158	1.7352	.50585		
Seeking Social Support	0-3 years	32	2.7292	.99258	1.907	0.112
	4-7 years	85	2.2863	.98286		
	8-11 years	35	2.6762	.90923		
	12-15 years	4	2.6667	1.21716		
	16 years and above	2	3.0000	.47140		
	Total	158	2.4810	.98286		
General Stress Coping Level	0-3 years	32	2.4849	.29324	0.950	0.437
	4-7 years	85	2.5298	.26667		
	8-11 years	35	2.5980	.20399		
	12-15 years	4	2.4914	.07646		
	16 years and above	2	2.6379	.07315		
	Total	158	2.5362	.25647		

The difference analysis of the participants' state anxiety and coping with stress levels according to the duration of snowboarding was examined with One-Way ANOVA Test. As a result of the analysis, it was determined that the levels of the self-confident approach and optimistic approach sub-dimensions of coping with stress differed according to the duration of snowboarding (Sig.p. < 0.05). As a result of the post-hoc (Tukey test) analysis performed to determine which categories caused the difference, it was determined that the participants who had been snowboarding for 8-11 years had higher levels of the self-confident approach and optimistic approach sub-dimensions of coping with stress than the participants who had been snowboarding for 0-3 years.

Table 10. Difference analysis of state anxiety and stress coping levels according to weekly training duration

	N	Mean	Std. Deviation	F	Sig.P

State Anxiety	5 hours and below	34	48.4049	1.28051	2.111	0.101
	6-9 hours	62	48.0921	.86862		
	10-13 hours	35	48.4194	.85073		
	14 hours and above	27	48.6053	.90632		
	Total	158	48.3196	.98430		
Self-Confident Approach	5 hours and below	34	3.5504	.49753	1.391	0.248
	6-9 hours	62	3.4677	.56387		
	10-13 hours	35	3.3959	.52097		
	14 hours and above	27	3.2857	.49961		
	Total	158	3.4385	.53211		
Optimistic Approach	5 hours and below	34	3.3765	.60255	1.706	0.168
	6-9 hours	62	3.3903	.55448		
	10-13 hours	35	3.2971	.60851		
	14 hours and above	27	3.1037	.54454		
	Total	158	3.3177	.57954		
Desperate Approach	5 hours and below	34	1.9596	.69544	2.568	0.056
	6-9 hours	62	1.7460	.56083		
	10-13 hours	35	1.8607	.58847		
	14 hours and above	27	2.1111	.57943		
	Total	158	1.8797	.61007		
Submissive Approach	5 hours and below	34	1.7892	.61861	1.428	0.237
	6-9 hours	62	1.6505	.47016		
	10-13 hours	35	1.7238	.47819		
	14 hours and above	27	1.8765	.44720		
	Total	158	1.7352	.50585		
Seeking Social Support	5 hours and below	34	2.1765	1.02899	1.715	0.166
	6-9 hours	62	2.4839	1.13027		
	10-13 hours	35	2.6762	.80637		
	14 hours and above	27	2.6049	.67328		
	Total	158	2.4810	.98286		
General Stress Coping Level	5 hours and below	34	2.5751	.25407	0.773	0.511
	6-9 hours	62	2.5017	.25552		
	10-13 hours	35	2.5350	.25674		
	14 hours and above	27	2.5683	.26459		
	Total	158	2.5362	.25647		

The difference analysis of the participants' state anxiety and stress coping levels according to the weekly training duration was examined with One-Way ANOVA Test. As a result of the analysis, it was determined that the state anxiety and stress coping levels did not differ according to the weekly training duration (Sig.p.> 0.05).

Table 11. Difference analysis of state anxiety and coping with stress levels according to nationality status

		N	Mean	Std. Deviation	F	Sig.P
State Anxiety	A national	5	47.8711	.39437	1.364	0.256
	B national	4	49.0194	1.46536		
	C national	7	47.9524	.53820		
	Not national	142	48.3338	.99420		
	Total	158	48.3196	.98430		
Self-Confident Approach	A national	5	3.9143	.19166	3.036	0.206
	B national	4	3.9643	.07143		
	C national	7	3.5306	.58154		
	Not national	142	3.4024	.53116		
	Total	158	3.4385	.53211		
Optimistic Approach	A national	5	3.7600	.32863	1.505	0.215
	B national	4	3.6000	.36515		
	C national	7	3.4286	.43861		
	Not national	142	3.2887	.59096		
	Total	158	3.3177	.57954		
Desperate Approach	A national	5	1.2750	.16298	2.680	0.095
	B national	4	1.5313	.32874		
	C national	7	1.6607	.50885		
	Not national	142	1.9217	.61627		
	Total	158	1.8797	.61007		
Submissive Approach	A national	5	1.3333	.26352	2260	0.084
	B national	4	1.2917	.28464		
	C national	7	1.7381	.49868		
	Not national	142	1.7617	.50855		
	Total	158	1.7352	.50585		
Seeking Social Support	A national	5	2.4000	1.14018	2.296	0.080
	B national	4	3.5833	.50000		
	C national	7	2.9048	.68622		
	Not national	142	2.4319	.98354		
	Total	158	2.4810	.98286		
General Stress Coping Level	A national	5	2.4690	.18665	0.345	0.793
	B national	4	2.6379	.16051		
	C national	7	2.5616	.08840		
	Not national	142	2.5345	.26624		
	Total	158	2.5362	.25647		

The difference analysis of the participants' state anxiety and coping with stress levels according to their status as national team athletes was examined with One-Way ANOVA Test. As a result of the analysis, it was determined that the levels of state anxiety and coping with stress did not differ according to their status as national team athletes (Sig.p.> 0.05).

Table 12. Difference analysis of state anxiety and coping with stress levels according to family income status

		N	Mean	Std. Deviation	F	Sig.P
State Anxiety	501-1000 TL	3	48.0000	.78323	1.890	0.134
	1001-1500 TL	4	49.4361	2.45161		
	1501-2000 TL	11	48.3444	.89121		
	2001 TL and above	140	48.2926	.92723		
	Total	158	48.3196	.98430		
Self-Confident Approach	501-1000 TL	3	3.2857	.28571	0.364	0.779
	1001-1500 TL	4	3.4643	.41033		
	1501-2000 TL	11	3.2987	.57305		

	2001 TL and above	140	3.4520	.53770		
	Total	158	3.4385	.53211		
Optimistic Approach	501-1000 TL	3	3.3333	.30551	0.049	0.986
	1001-1500 TL	4	3.4000	.23094		
	1501-2000 TL	11	3.2727	.58837		
	2001 TL and above	140	3.3186	.59295		
	Total	158	3.3177	.57954		
Desperate Approach	501-1000 TL	3	2.5417	.52042	1.225	0.303
	1001-1500 TL	4	1.9375	.41458		
	1501-2000 TL	11	1.8523	.62704		
	2001 TL and above	140	1.8661	.61212		
	Total	158	1.8797	.61007		
Submissive Approach	501-1000 TL	3	1.8333	.16667	0.062	0.980
	1001-1500 TL	4	1.7083	.67185		
	1501-2000 TL	11	1.6970	.33181		
	2001 TL and above	140	1.7369	.52020		
	Total	158	1.7352	.50585		
Seeking Social Support	501-1000 TL	3	2.4444	.69389	0.141	0.936
	1001-1500 TL	4	2.5833	1.06719		
	1501-2000 TL	11	2.3030	.60470		
	2001 TL and above	140	2.4929	1.01505		
	Total	158	2.4810	.98286		
General Stress Coping Level	501-1000 TL	3	2.7011	.29327	0.763	0.517
	1001-1500 TL	4	2.5776	.28348		
	1501-2000 TL	11	2.4608	.28572		
	2001 TL and above	140	2.5374	.25370		
	Total	158	2.5362	.25647		

The difference analysis of the participants' state anxiety and coping with stress levels according to family income levels was examined with One-Way ANOVA Test. As a result of the analysis, it was determined that the state anxiety and coping with stress levels did not differ according to family income levels (Sig.p.> 0.05).

Table 13. Relationship between state anxiety and stress coping levels

		1	2	3	4	5	6	7
State Anxiety	r.	1						
	p.							
Self-Confident	r.	-.374**	1					
Approach	p.	.000						
Optimistic	r.	-.484**	.726**	1				
Approach	p.	.000	.000					
Desperate Approach	r.	.373**	-.449**	-.456**	1			
	p.	.000	.000	.000				
Submissive	r.	.210**	-.348**	-.299**	.627**	1		
Approach	p.	.008	.000	.000	.000			

Seeking Social Support	r.	.155	-.147	-.190*	.130	.120	1	
	p.	.051	.065	.017	.103	.132		
General Stress Coping Level	r.	.016	.289**	.257**	.561**	.576**	.383**	1
	p.	.844	.000	.001	.000	.000	.000	

The relationship between state anxiety and levels of coping with stress was examined using correlation analysis. As a result of the analysis, a statistically significant relationship was found between the sub-dimensions of state anxiety and levels of coping with stress (Sig.p. < 0.05). The directions and levels of these relationships are as follows;

• It was found that there was a negative and moderate relationship between the state anxiety and the self-confident approach sub-dimension levels of the coping with stress scale (r: -0.374; Sig.p<0.05).

• It was found that there was a negative and moderate relationship between the state anxiety and the optimistic approach sub-dimension levels of the coping with stress scale (r: -0.484; Sig.p<0.05).

• It was found that there was a positive and moderate relationship between the state anxiety and the helpless approach sub-dimension levels of the coping with stress scale (r: 0.373; Sig.p<0.05). It was found that there was a positive and low-level relationship between the state anxiety and the submissive approach sub-dimension levels of the coping with stress scale (r: 0.210; Sig.p<0.05).

Discussion and Conclusion

It was determined that there was no statistically significant difference between the pre-competition state anxiety inventory total score averages of snowboard athletes in terms of gender. When we look at the literature, there are parallel and opposite results with ours. Terzioğlu et al. (2013) found that the pre-competition state anxiety levels of male folk dancers were higher than female folk dancers. Again, in the study conducted by Hacıcaferoğlu et al. (2015), it was stated that male folk dancers had higher pre-competition state anxiety scores. They found that the anxiety levels of male athletes were higher than the anxiety levels of female athletes. There are also some studies where the state anxiety levels of female athletes were higher than male athletes (Başaran et al., 2009). Dönmez (2013) determined in a study that he conducted that the pre-match state anxiety levels of female basketball players were higher than male basketball players. Karadeniz (2005) and Özbaş et al. (2012) also determined that female students have higher state anxiety before exams than male students. Again, Çankıroğlu (2007) found that female students have higher test anxiety when compared to male students. There are studies that give similar results to our study. According to Engür (2002), in the study titled "The Effect of Success Motivation on State Anxiety Levels in Elite Athletes", no significant difference was found when state anxiety levels were compared according to gender. Başaran et al. (2009) stated that no significant difference was found in the state anxiety scores of male athletes compared to female athletes. While no significant difference was found in the self-confident approach, optimistic approach, submissive approach, seeking social support and general stress coping levels of the stress coping methods scale sub-dimensions in terms of gender among snowboard athletes, it was found that men had higher levels of the helpless approach sub-dimension than women, Çoruh (2003) reported that there were significant differences between male and female students in the Faculty of Education. It was stated that females used the strategies of "taking refuge in religion", "seeking external help" and "escape and abstraction" more than men, while male students used the strategy of "active planning" more. Aslan and Agbuga (2014) observed that gender

affected the stress coping methods of athletes doing taekwondo. It was found that male athletes doing taekwondo used more effective stress coping methods than female athletes. In the same study, male athletes were found to have higher scores on the self-confident approach and optimistic approach subscales, which are effective methods for coping with stress, than female athletes. Reevy and Maslach (2001) determined in their study that girls have higher expectations of receiving social support than male athletes. Based on our findings, the fact that female athletes are more confident and optimistic than male athletes may be due to women seeking help from their surroundings during a problem and consulting others to solve the problem. However, male athletes tend to think like they can do it themselves, are introverted and do not consult anyone, which may cause stress in male athletes in terms of gender.

There was no statistically significant difference in the total state anxiety inventory scores of snowboarders according to their age. In parallel with our results, Engür (2002) found that there was no relationship between the ages of the athletes and their "state anxiety" levels. Considering the experience of the athletes, the lack of a relationship between the "state anxiety" levels is similar to the results of this study in the age variable. Again, Acar (2019) found no significant difference in the state and trait anxiety scores of team and individual athletes according to the age variable. Arseven and Güven (1992) analyzed the data on the anxiety levels of athletes in different branches (basketball, handball, volleyball and athletics) divided into two groups according to age (over 20 and under 20), in the competition environment, and found no significant relationship between the results. Although these results support our study, considering that there are some findings in the opposite direction, more studies of this kind should be conducted. For example, in the study conducted by Doğan and Eygü (2018) titled "Examination of Competition Anxiety Levels of Athletes Doing Winter Sports", it was determined that there was a significant difference between age variables and anxiety levels. It was determined that the anxiety levels of older athletes were higher than those of younger athletes, which is not similar to our study (Doğan and Eygü, 2018). It was determined that the optimistic approach sub-dimension of snowboard athletes coping with stress varied according to age. In our study, it was determined that the optimistic approach sub-dimension levels of athletes aged 7-20 and 21 and above were higher than those of athletes aged 9-12 and 13-16. Bebetsos and Antoniou (2003) revealed that older athletes were better prepared for negativities in coping with stress than younger athletes and showed higher success in emotional control. They think that the reason for this is mostly due to experience. Başakçıoğlu (2019) did not find any significant difference in terms of the sports age variable in the stress coping strategies of amateur league athletes in terms of sports age. Özbekçi (1989) examined basketball, volleyball and track and field athletes in terms of state anxiety scores and did not find a relationship between age and competition stress levels. In the study conducted by Koca and Yıldız (2018), which is similar to our study in terms of results, examining the relationship between factors that push football referees to stress, job satisfaction and job performance, it was concluded that stress increases as age decreases. Although there was no significant difference between stress factors and the age variable in this study, when the averages were examined, it was seen that stress averages decreased as age increased in the totality of individual, environmental and organizational factors. Söylemez (2019) also observed a significant difference in the submissive approach sub-dimension of the stress coping style sub-dimension in his study. It is observed that the submissive approach sub-dimension mean scores of referees between the ages of 18-25 are higher than those of referees between the ages of 26-35. In our study, athletes between the ages of 7-20 and 21 and above may participate in and experience such competitions more than athletes between the ages of 9-12 and 13-16, and they may be more optimistic before the competition because they

are used to the conditions in which the competition takes place. The fact that athletes between the ages of 9-12 and 13-16 are separated from their families, meet new people, and have negative thoughts about the competition result may cause stress in athletes.

In snowboarders, there was no significant difference between pre-competition state anxiety scores and sub-dimensions of the stress coping scale according to their educational status. When we look at the literature, Uslu (2018), who found similar results to ours, stated that pre-competition state anxiety scores of folk dancers did not show a statistically significant difference according to their educational status. However, in the same study, differences were found between the groups in the sub-dimension of the stress coping scale. This result contradicts our study. Öztürk (2020) did not find a significant difference in the comparison of stress coping levels according to educational status in the study he conducted to determine the mobbing and stress coping levels of folk dance referees. Another study contradicting ours was Çelik (2010), who evaluated the pre-competition state anxiety levels of high-level judokas and found that there was a difference according to their educational status. It was observed that athletes who graduated from primary school had the lowest anxiety level and that the anxiety level increased and athletes with master's degrees, high school degrees, undergraduate degrees and finally athletes with associate degrees had the highest anxiety score.

It has been determined that snowboarders' state anxiety and coping with stress levels differ according to their height. The differences obtained are shown below.

• It has been determined that participants who are 151-170 cm. and 171 cm. and above have higher state anxiety levels than participants who are 130 cm. and below,

• Participants who are 151-170 cm. and above have higher levels of the self-confident approach to coping with stress sub-dimension than other participants,

• Participants who are 130 cm. and below and 171 cm. and above have higher levels of the optimistic approach to coping with stress sub-dimension than other participants,

• Participants who are 131-150 cm. and 151-170 cm. and above have higher levels of the helpless approach to coping with stress sub-dimension than participants who are 130 cm. and below.

Nacar (2011) conducted a study investigating the anxiety levels of handball players in terms of some variables, and when we looked at the anxiety levels of athletes in terms of their height, it was determined that those with heights of 150–160 cm had 63%, 161–170 cm had 76%, and 171–180 cm had 61% "high anxiety" levels. In our study, those with heights of 151–170 cm and 171 cm and above had higher anxiety levels than those with heights of 130 cm and below. When we looked at the literature, we could not find any studies on the effects of height on coping with stress and state anxiety.

It has been determined that snowboarders' state anxiety and coping with stress levels differ in terms of their self-confident approach to coping with stress according to their weight. It has been determined that participants weighing 71 kg and above have higher levels of self-confident approach to coping with stress compared to athletes weighing 50-60 kg. When the literature is reviewed, Judge et al. (2016) found that according to the total of the competition anxiety test SCAT (Sports Competition Anxiety Test) according to weight classes, the weight of the athlete has no effect on competition anxiety ($F = 0.269$, $p = 0.977$). There are also studies finding the opposite of this result. For example, in a study conducted by Nacar (2011) investigating the anxiety levels of handball players in terms of some variables, when we look at the anxiety status of athletes according to their weight, it has been stated that those

weighing 50-60 kg (76%), 61-70 kg (69%), and 81 kg and above (60%) are at the "high anxiety" level. In our study, the reason why athletes weighing 71 kg and above had a higher self-confident approach than athletes weighing 50-60 kg may be due to their physical well-being, their stronger body, their high self-confidence, and the fact that athletes of this weight are older.

It has been determined that the levels of state anxiety and coping with stress of snowboard athletes differ according to the snowboarding age category, and the levels of the optimistic approach and helpless approach sub-dimensions of coping with stress differ according to the snowboarding age category. It has been determined that the levels of the optimistic approach sub-dimension of coping with stress of athletes over the age of 15 are higher than those of the U-15 age category, and the helpless approach sub-dimension of athletes in the U-15 age category are higher than those of the U-11 age category. When the literature is examined, according to the research conducted by Alkan (2019), the anxiety levels of female and male athletes competing in the senior category are higher than those of other categories. The reason for this is that the athletes' self-confidence and belief in their ability to overcome pressure are somewhat weak both under pressure and before the competition, and it can be said that the athletes are engaged in this branch at a high level and these Turkish Championships, which are in the nature of selecting the national team for the World and Olympic Championships, are of great importance to the athlete and therefore increase the level of anxiety (Alkan 2019). When we look at the results of our study, the fact that the optimistic approach of athletes over the age of 15 is higher than that of the U15 age category may be due to experience or more competition experience than athletes in the lower category.

It has been determined that the levels of state anxiety and coping with stress of snowboarders differ according to the duration of snowboarding, and the levels of the self-confident approach and optimistic approach sub-dimensions of coping with stress differ according to the duration of snowboarding. The findings obtained show that the levels of the self-confident approach and optimistic approach sub-dimensions of coping with stress of athletes who have been snowboarding for 8-11 years are higher than those of athletes who have been snowboarding for 0-3 years. Similar results to the results obtained in our study, (Uslu 2018) found significant differences in terms of the duration of folk dancers' involvement in folk dances in terms of the sub-dimensions of coping with stress such as taking refuge in religion, escaping, isolation (biochemical) and acceptance-cognitive restructuring. Again, Bulut (2009), in his study examining the stress coping situations of teachers by looking at their length of service in their profession, reported that teachers who have been working for 16-20 years have a positive effect on coping with stress and that teachers who have been working for 6-10 years use a more self-confident coping style. He emphasized that as teachers' length of service in their profession increases, their experience also increases, which provides an advantage for teachers in terms of problem solving and using active methods in coping with stress. Atmaca (2020) found in his study that there was a significant difference between the scores of referees who have been referees for 6-10 years and 16 years and above in terms of organizational factors between referees' years of service and stress factors. He also found that the organizational factor scores of referees who have been referees for 16 years and above were lower than the scores of referees who have been referees for 6-10 years. All of these studies are consistent with our study. We can say that one of the most important reasons for this is experience. If we have been doing the same thing for years and have become professional at it, if the work we do is both materially and spiritually present in our lives, it can cause us to do it comfortably and without stress. There is a study in the literature that found different results than ours, for example, in the study conducted by Güllü and Yıldız (2019) examining

the effect of stress sources on the performance of football referees, no significant relationship was found between the year of refereeing and the level of stress.

When we look at the weekly training durations of snowboarders, (%21.5) train for 5 hours or less, (%39.2) for 6-9 hours, (%22.2) for 10-13 hours, (%17.1) for 14 hours or more per week. According to these durations, no difference was found in the pre-competition state anxiety levels and stress coping scale sub-dimensions of snowboarders. When we look at the literature, the study by Çelik (2010) contradicts us and when we look at the weekly training durations of high-level judokas, it is stated that athletes who train for 0-2 hours have the lowest anxiety scores and as the weekly training duration increases, the anxiety scores of the athletes also increase. Therefore, significant differences were observed in the study.

When we look at the status of snowboarders being national team athletes, 5 people are A national, 4 people are B national, 7 people are C national, and 142 people are not national athletes. No significant difference was found between the state anxiety scores of the athletes and the sub-dimensions of the stress coping scale. Öztürk (2019), in this study conducted to examine the effects of state and trait anxiety states of athletes involved in darts on performance, did not show a significant difference in his research according to their national status, parallel to ours. Similarly, Doğan and Eygü (2018), who reached the same conclusion as us, did not determine a significant difference in their national status in their study titled "Examination of competition anxiety levels of athletes doing winter sports". The study contradicting ours was determined by Engür (2002) in which a statistically significant difference was found between the "state anxiety" average scores of national and non-national athletes. The average scores of non-national athletes regarding "state anxiety" were found to be statistically significantly higher than the average scores of national athletes, which is not similar to our study.

When we examined snowboard athletes according to their family monthly income levels, it was determined that snowboard athletes did not differ in terms of pre-competition state anxiety levels and stress coping methods sub-dimensions. In the study conducted by Öztürk (2020) to investigate the relationship between the existence of the concept of mobbing and stress coping styles in folk dance referees, no significant difference was observed in the comparison of stress coping levels according to income levels. In another study that found the same result as ours, Bozkuş (2017) found that there was no significant difference between the pre-competition and post-competition state anxiety levels of elite wrestlers in his study on comparing their pre-competition and post-competition state anxiety scale scores of wrestlers with different monthly income levels. The one who found a different result with us was Uslu (2018). When the state anxiety scores of folk dancers were compared before the competition in terms of their monthly income, it was seen that the state anxiety scores were the lowest in those with high monthly incomes, and the mean score in question was the highest in folk dancers with the lowest monthly incomes. This contradicts our study. Again, the similarity with ours in this study was that the income level variable did not create a significant difference in terms of the sub-dimensions of methods of coping with stress.

As a result of the relationship between state anxiety and levels of coping with stress, it was determined that there was a negative and moderate relationship with the self-confident approach sub-dimension levels of the state anxiety and coping with stress scale, a negative and moderate relationship with the optimistic approach sub-dimension levels of the state anxiety and coping with stress scale, a positive and moderate relationship with the helpless approach sub-dimension levels of the state anxiety and coping with stress scale, and a positive

and low-level relationship with the submissive approach sub-dimension levels of the state anxiety and coping with stress scale.

These changes in the results are likely to cause athletes to experience excessive stress and anxiety, especially during the competition periods in snowboarding, as in other sports. Personality traits, mental states, the importance of the competition, the athlete's competition experience, the competitive situation with their opponents, fear of injury, family pressure and environmental factors can cause athletes to experience anxiety and stress before the competition. If stress and anxiety levels are experienced intensely in snowboarders, this anxiety can create fear in the athlete and cause the athlete to make mistakes. This causes the athlete to fail. If our state anxiety level is low or moderate, this can give us positive results. Because a moderate level of anxiety can motivate the athlete in the face of negativity, make them think solution-oriented and help them stay calm. These can also contribute to the athlete achieving more successful results.

Suggestions

Within the scope of this thesis, the pre-competition state anxiety levels of snowboarders and their methods of coping with stress were examined in terms of different variables. In this sense, it is thought that it will contribute positively to the literature, in addition to the very few studies on snowboarding, and will prepare the groundwork for future studies in this field.

- This study is on all athletes doing winter sports and a more comprehensive study can be conducted by measuring the anxiety and stress levels of the athletes after the competition.
- Coaches can be given training on anxiety and stress. It is also recommended that professional guidance and counseling services be provided in clubs or teams.
- Coaches having athletes train close to the competition can also bring stress and anxiety levels to normal levels.
- Athletes can be made to do activities and events that will reduce their stress and anxiety levels before the competition.
- Coaches and clubs taking athletes to many national and international competitions can help keep athletes' pre-competition anxiety and stress levels at a manageable level.
- Sports psychologists within the Turkish Ski Federation and other sports federations can be actively assigned by the federations to keep the anxiety and stress levels of athletes under control before the competition.

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Examining The Effective Decision-Making Situations Of Amateur Football Players By Various Variables

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Abstract

In this study, it was aimed to examine the effective decision-making situations of amateur football players affiliated with the Bayburt Amateur League by some variables. A total of 102 football players playing in the amateur league participated in the study. The data of the research were obtained using a personal information form and a sports effective decision-making scale consisting of 15 items. Descriptive statistics and normality test were utilized. To examine the differences between the educational level variable and the sub-dimensions, t-test was used; and for the examination of the sub-dimensions according to age, sports age, played club, and played position classification, Analysis of Variance (ANOVA) test was used. SPSS 26 statistical package program was used for the analysis of the study. It was found that there was a significant difference between the ages of the players and the scores they received from the external decision-making sub-dimension ($p<.05$). It was found that there was a significant difference between the scores of the players obtained from the scale sub-dimensions and the clubs they played for ($p<.05$). The age levels of amateur football players and the clubs they play for are important factors that can affect the decision-making process in the performance of athletes. In this regard, it has been observed that the younger the age in the external decision-making process, the higher the rates of influence. As age increases, the external decision-making process decreases. It has also emerged from our study that it is important for players to be effective in decision-making in the club where they play.

Keywords: Amateur league, Football players, Decision making

Introduction

Football is the most popular sport globally among various sports branches. It is played by millions of individuals and watched by hundreds of millions (Wesson, 2002). In football, a team sport where the outcome is evaluated by goals scored or conceded into the nets in a large playing field with many players involved, recent trends have shifted towards more systematic and planned training sessions, replacing conventional methods (İnal, 2004; Carling, 2016). Factors such as exercise style during training and matches, physical fitness level, general mood, and the ability to make correct and effective decisions stand out as some of the factors affecting football players' performances (Reilly et al., 2008; Williams & Krane, 2015).

Decision-making is a natural process encountered at every stage of human life. Although the decision-making process may seem easy at first, it emerges as a complex process (Pekdoğan, 2015). Defined as choosing the most appropriate option among presented alternatives (Tatlılıoğlu & Deniz, 2011), decision-making and decision-making style are crucial both in individuals' daily lives and in sports environments. Appropriate and timely decisions made in sports environments can positively impact the game, whereas incorrect decisions or decisions made at the wrong time can not only negatively affect the athlete during the game but also influence the game's outcome (Leveaux, 2010). Athletes in many sports have to make decisions among various possibilities. While a footballer decides when and where to strike the ball, a gymnast decides to attempt a new movement sequence, or a wrestler applies a specific grappling technique, they may get stuck in the execution phase of the decision made internally. In such a situation, although the athlete may choose one of the possibilities, the steps to execute the movement may either be delayed or not taken at all (Baumann, 1986). In every moment of human life, decisions are made about how life will be. This can sometimes be instantaneous decisions and sometimes decisions for the future. Since everything realized as a result of decision-making is crucial in our lives, it is necessary to think carefully before making decisions (Deveci, 2011). Decision-making is the act of selecting from available actions those that are appropriate for achieving the individual's goals (Kahneman, 2011; Hastie & Dawes, 2010). Decision-making encompasses cognitive and behavioral states that allow choosing among various options in different situations. In daily life, individuals may encounter decision-making behaviors numerous times. This can sometimes be a quite complex structure to understand structurally. Decision-making can be expressed as a tendency that reduces the problems encountered when there are many choices according to need. When it comes to decision-making, what gains more importance is the tendency to anticipate consequences and choose the one with the most power to prepare for and reach the goal (Kuzgun, 1992). In line with the definitions made, we can define decision-making as the action of determining the right among the alternatives created by calculating the effects of all factors objectively, using scientific methods, to solve problems or achieve goals (İlmez, 2010).

Athletes need to be physically and psychologically strong during training and competition periods. It has been determined in this study that football players are affected by various factors. Moreover, besides the psychological conditions of football players, effective decision-making situations are also important. Since effective decision-making situations of athletes affect the performance they will display during training and competitions, they hold an important place in athletes' lives. Studies focusing particularly on correct and effective decision-making techniques during training and competition periods can positively influence athletes' correct and effective decision-making situations. In this context, the aim of this study

is to examine the effective decision making of amateur soccer players in terms of some variables.

Material and Method

Ethics Committee Permission

Voluntary consent forms were obtained from the football players participating in the research. Necessary permissions were obtained from the scale owners for the scales used in our research. In the implementation of the current research, the "Higher Education Institutions Scientific Research and Publication Ethics Directive" was followed. The research was implemented after the ethics committee decision of Bayburt University dated 20.03.2024 and numbered E-15604681-100-194854 was obtained.

Research Model

Descriptive survey model was used in this study. Karasar (2007) defines the descriptive survey model as a research model that aims to describe a past or present situation as it exists. In this model, events, objects, institutions, groups or existing conditions in various fields are described in detail. The current situation is presented as it is without the intervention of the researcher.

Universe and Sample / Study Group

A total of 102 amateur football players selected from the teams playing licensed football in the Bayburt Amateur League in the 2023-2024 season took part in this study.

Data Collection Tools

Personal Information Form: Developed by the researcher to determine the data and personal information (age, education level, years of sports experience, duration of playing football professionally, and the club played for) to be used in the study.

Effective Decision Making in Sports Scale: It consists of 15 items and 2 sub-dimensions. The internal decision making sub-dimension consists of items 1,2,3,4,5,6,7 and the external decision making sub-dimension consists of items 8,9,10,11,11,12,13,14,15. In the scale, external decision-making items are reverse coded items. The scale is evaluated on a 5-point Likert scale (5: Strongly Agree, 4: Agree, 3: Neutral, 2: Disagree, 1: Strongly Disagree). The score that can be obtained from the scale varies between 8 and 40 in the external decision making sub-dimension and between 7 and 35 in the internal decision making sub-dimension. The reliability coefficients of the scale were determined as external decision making 0,87 and internal decision making 0,85 (Çetin & Kara, 2024).

Data Analysis

Before proceeding to statistical analyses, assumptions such as normality, homogeneity, stationarity, linearity, etc., were checked, and statistical information regarding which assumptions were met was provided. Based on this information, the rationale for choosing which analysis techniques were preferred and which ones were not preferred was justified (Tozoğlu and Dursun, 2020). In the study, data processing procedures were conducted for the analysis of the data obtained from the scale. For this purpose, the personal information form filled out by the football players, the "Effective Decision Making in Sports Scale," were thoroughly reviewed. Subsequently, the data suitable for the research were evaluated for analysis. SPSS 26.0 analysis software was used. Descriptive analysis techniques were primarily used for data analysis. In normally distributed data, parametric tests were used, and

the "Independent Samples T-Test" was conducted to determine the differences between two different independent variables and the subscales of the scale, while the "One-Way Analysis of Variance" test and "LSD" from multiple comparison tests were conducted to determine the differences between more than two different variables and the subscales of the scale, and the results were evaluated at the significance level of $p<0.05$.

Findings

Table 1. Demographic characteristics of the participants

		n	%
Age	18-22 age	37	36.3
	23-27 age	46	45.1
	28 + age	19	18.6
Education Level	High School	64	62.7
	University	38	37.3
Sports Age	1-2 years	9	8.8
	3-4 years	19	18.6
	5-6 years	24	23.5
	7-10 years	50	49.1
Club	Danişment	21	20.6
	Soğukgöze	25	24.5
	Çatıksu	26	25.5
	Konursu	30	29.4
Position You Play	Goalkeeper	14	13.7
	Back	20	19.7
	Stopper	18	17.6
	Midfielder	23	22.5
	Wing	16	15.7
	Forward	11	10.8

The research was conducted on a total of 102 football players, with 37 aged 18-22, 46 aged 23-27, and 19 aged 28 and above. Regarding the question about the educational level of participating football players, it was observed that 64 answered high school and 38 answered university. In response to the question about the years of experience in sports, it was observed that 9 answered 1-2 years, 19 answered 3-4 years, 24 answered 5-6 years, and 50 football players answered 7-10 years. Regarding the question about the club they play for, it was observed that 21 answered Danişment Sport, 25 answered Soğukgöze Sport, 26 answered Çatıksu Sport, and 30 answered Konursu Sport. Additionally, in response to the question about the position they play, it was observed that 14 football players answered Goalkeeper, 20 answered Defender, 18 answered Center-back, 23 answered Midfielder, 16 answered Wing, and 11 answered Forward.

Table 2. Descriptive statistics distribution

	Effective Decision Making Scale in Sports (General)	Internal Decision Making	External Decision Making
N	102	102	102
Mean	3.322	4.268	2.493
Std. Deviation	0.482	0.759	0.860
Skewness	**0.351**	-2.169	0.589

Std. Error of Skewness	0.239	0.239	0.239
Kurtosis	**1.312**	2.393	0.308
Std. Error of Kurtosis	0.474	0.474	0.474

When the descriptive data of the Sports Decision-Making Scale were examined, it was found that the skewness and kurtosis values were between +1.5 and -1.5 (Tabachnick & Fidell, 2013). Based on this point, parametric tests were applied in our research.

Table 3. Effective decision making scale in sports (SEKVÖ) reliability distribution results

Scale and Sub-Dimensions	Number of Items	Cronbach's Alpha
General	15	0.704
Internal Decision Making	7	0.872
External Decision Making	8	0.882

According to the reliability distribution results of the scale used in our research, the Cronbach's Alpha coefficient value was found to be.704. This value being within the range of 0.60 <R2 <0.80 indicates that the scale used is quite reliable (Özdamar, 2002; George & Mallery, 2010).

Table 4. Variance analysis test results of football players' scale sub-dimensions according to age variable

Scale and Sub-Dimensions	Age	n	x	ss	f	p	LSD
General	18-22 Age[a]	37	3.320	0.593	0.681	0.509	-
	23-27 Age[b]	46	3.368	0.444			
	28+ Age[c]	19	3.214	0.300			
Internal Decision Making	18-22 Age[a]	37	4.104	0.742	1.457	0.238	-
	23-27 Age[b]	46	4.338	0.795			
	28+ Age[c]	19	4.421	0.675			
External Decision Making	18-22 Age[a]	37	4.104	0.742	2.005	**0.048***	**a<c**
	23-27 Age[b]	46	4.338	0.795			
	28+ Age[c]	19	4.421	0.675			

*p<0.05

There was found to be a significant difference at the p <0.05 level between the ages of the football players and the scores they obtained from the external decision-making sub-dimension. Significant differences were found between the age groups of 18-22 years and 28 years and above in the external decision-making sub-dimension. However, no significant difference was found among age groups in the internal decision-making sub-dimension.

Table 5. Variance analysis test of football players' scale sub-dimensions according to sports age variable

Scale and Sub-Dimensions	Sports Age	n	x	ss	f	p	LSD
General	1-2 Year[a]	9	3.370	0.290	0.078	0.972	-
	3-4 Year[b]	19	3.347	0.219			

	5-6 Year[c]	24	3.291	0.408			
	7-10 Year[d]	50	3.318	0.607			
Internal Decision Making	1-2 Year[a]	9	4.428	0.410	0.647	0.587	-
	3-4 Year[b]	19	4.443	0.398			
	5-6 Year[c]	24	4.226	0.774			
	7-10 Year[d]	50	4.194	0.893			
External Decision Making	1-2 Year[a]	9	2.444	0.628	0.183	0.908	-
	3-4 Year[b]	19	2.388	0.530			
	5-6 Year[c]	24	2.474	0.755			
	7-10 Year[d]	50	2.552	1.040			

*p<0.05

There was no significant difference at the p <0.05 level observed between the football players' years of sports age and the averages of the scores they obtained from the sub-dimensions of the scale.

Table 6. T-Test results of football players' scale sub-dimensions according to education level variable

Scale and Sub-Dimensions	Education Level	n	x	ss	sd	t	p
General	High School	64	3.295	0.491	100.000	-0.715	0.476
	University	38	3.366	0.470			
Internal Decision Making	High School	64	4.227	0.716	100.000	-0.710	0.479
	University	38	4.338	0.832			
External Decision Making	High School	64	2.480	0.894	100.000	-0.203	0.839
	University	38	2.516	0.811			

*p<0.05

There was no significant difference at the p <0.05 level found between the educational levels of the football players and the averages of the scores they obtained from the sub-dimensions of the scale.

Table 7. Analysis of variance test results of football players' scale sub-dimensions according to the club played variable

Scale and Sub-Dimensions	Club	n	x	ss	f	p	LSD
General	Danişment[a]	21	3.371	0.211	2.552	**0.046***	**b<c**
	Soğukgöze[b]	25	3.232	0.383			**c>d**
	Çatıksu[c]	26	3.515	0.640			
	Konursu[d]	30	3.195	0.497			
Internal Decision Making	Danişment[a]	21	4.625	0.368	2.254	**0.028***	**a>c**
	Soğukgöze[b]	25	4.280	0.817			**c>d**
	Çatıksu[c]	26	4.137	0.938			
	Konursu[d]	30	4.123	0.688			
External Decision Making	Danişment[a]	21	2.273	0.374	3.971	**0.010***	**a<c**

	Soğukgöze[b]	25	2.315	0.884	**b<c**
	Çatıksu[c]	26	2.971	0.966	**d<c**
	Konursu[d]	30	2.383	0.865	

*p<0.05

There was found to be a significant difference at the p <0.05 level between the football players' club played and the averages of the scores they obtained from the scale sub-dimensions. In the Internal Decision Making sub-dimension, significant differences were found between Danişment Sport and Çatıksu Sport, as well as between Danişment Sport and Konursu Sport. In the External Decision Making sub-dimension, significant differences were found between Danişment Sport and Çatıksu Sport, Soğukgöze Sport and Çatıksu Sport, as well as between Konursu Sport and Çatıksu Sport.

Table 8. Analysis of variance test results of football players' scale sub-dimensions according to the played position variable

Scale and Sub-Dimensions	Position You Play	n	x	ss	f	p	LSD
General	Goalkeeper[a]	14	3.247	0.436	0.293	0.916	-
	Back[b]	20	3.423	0.546			
	Stopper[c]	18	3.314	0.485			
	Midfielder[d]	23	3.269	0.565			
	Wing[e]	16	3.329	0.386			
	Forward[f]	11	3.345	0.418			
Internal Decision Making	Goalkeeper[a]	14	3.959	0.971	0.747	0.590	-
	Back[b]	20	4.335	0.420			
	Stopper[c]	18	4.341	0.752			
	Midfielder[d]	23	4.229	0.891			
	Wing[e]	16	4.267	0.866			
	Forward[f]	11	4.506	0.453			
External Decision Making	Goalkeeper[a]	14	2.625	0.859	0.283	0.921	-
	Back[b]	20	2.625	0.900			
	Stopper[c]	18	2.416	0.839			
	Midfielder[d]	23	2.429	0.863			
	Wing[e]	16	2.507	0.842			
	Forward[f]	11	2.329	0.984			

*p<0.05

There was no significant difference at the p <0.05 level found between the football players' played positions and the averages of the scores they obtained from the scale sub-dimensions.

Discussion and Conclusion

In this study, the aim was to examine the effective decision-making situations of amateur licensed football players affiliated with the Bayburt Amateur League, in relation to certain variables. A total of 102 male football players participated in the research, with 37 in the age group of 18-22, 46 in the age group of 23-27, and 19 aged 28 and above. Significant differences were found at the $p<0.05$ level between the ages of the players and the scores they obtained from the external decision-making subscale of the scale. Parallel to our study, Akbulut (2012) found in his study on amateur and professional male football players that decision-making, problem-solving, and communication skills did not vary according to age groups. On the other hand, Bağlıkol (2010) examined decision-making strategies in 8th grade students and found significant differences in decision-making strategies depending on age.

Regarding education level, 64 players reported high school education and 38 reported university education. There was no significant difference at the $p<0.05$ level between the education levels of the players and the scores they obtained from the scale subscales.

Regarding the position played, 14 players reported being goalkeepers, 20 defenders, 18 stoppers, 23 midfielders, 16 wingers, and 11 forwards. There was no significant difference at the $p<0.05$ level between the positions played by the players and the scores they obtained from the scale subscales. Similar to our study, Akbulut (2012) found in his study on amateur and professional male football players that decision-making, problem-solving, and communication skills did not vary according to the positions played.

Looking at studies related to effective decision-making in the literature, Türksoy et al. (2019) conducted a study on amateur league football players and found that players tried to make careful decisions based on self-confidence rather than making evasive, panicky, or procrastinating decisions. They also found that players with a performance climate were more likely to deviate from ethical standards. Aktaş et al. (2018) found no significant difference in perception and decision-making, judgment, and reaction values, but numerically, the increase favored regular athletes. Kesici (2002) examined the comparative effects of psychological conditions such as adaptation, attribute, accusation, perseverance, and autonomy on decision-making strategies in university students and found that decision-making strategies were influenced by psychological conditions.

In conclusion, age and the clubs players belong to are important factors that can affect the performance of amateur football players in the effective decision-making process. It was observed that the younger the age, the greater the impact on external decision-making processes. As age increases, the external decision-making process decreases. The club where players play also emerged as an important factor in effective decision-making in our study. In this context, it is thought that informing athletes about effective decision-making in sports will contribute not only to their lives but also to their sports success. Further research in different sports branches and on professional athletes can determine how effective decision-making affects athletes.

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