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İÇİNDEKİLER- ARTICLE CONTENTS

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The Determined of Relationship Between Team Cohesion and Effective Communication Skill Levels in Volleyball Players

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Abstract

The aim of this research is to determine the relationship between team cohesion and effective communication skill levels in volleyball players. In the study, a descriptive relational survey model was used. The study group consists of 193 athletes, including 140 females and 53 males. For the "Group Environment Questionnaire (GEQ)", "Scale for Effective Communication in Team Sports" and personal information form were used as data collection tools. During the analysis phase, it was determined that the data had a normal distribution, and an Independent Sample T-Test, One-Way Analysis of Variance (ANOVA) test was used for group comparisons. The relationship between Group Environment and Effective Communication levels was determined by Pearson's Analysis. The analysis results showed that; there was no a significant difference according to gender, position and year of sport in the Group Environment Questionnaire. There was a significant difference according to marital status in the Group Environment-Task. In the Scale for Effective Communication in Team Sports; There was no a significant difference according to gender and position. There was a significant difference found according to age and marital status variables in the effective communication. There was a significant difference according to year of sport in disctinctiveness-negative conflict scores. As a result of the correlation analysis, there was a positive and moderate relationship between team cohesion with effective communication. However, it was determined that there was no a significant correlation between team cohesion and sub-dimension scores and distinctiveness -negative conflict scores. In this regard, it is foreseen that the cooperation of club technical members-athlete and including in-club social activities will be a supportive factor.

Keywords: Team Sports, Team Cohesion, Team Communication, Volleyball

Voleybol Oyuncularında Takım Uyumu ile Etkili İletişim Beceri Düzeyleri Arasındaki İlişkinin Belirlenmesi

Özet

Bu araştırmanın amacı, voleybolcularda takım uyumu ile etkili iletişim beceri düzeyleri arasındaki ilişkinin belirlenmesidir. Çalışmada, betimsel nitelikte ilişkisel tarama modeli kullanılmıştır. Çalışma grubu, 140 kadın 53 erkek olmak üzere 193 sporcudan oluşmaktadır. Veri toplama aşamasında "Takım Birlikteliği Envanteri", "Spor Takımları İçin Etkili İletişim Ölçeği" ve kişisel bilgi formu kullanılmıştır. Analiz aşamasında verilerin normal dağılım gösterdiği belirlenmiş olup, grup karşılaştırmaları için Bağımsız Örneklem T-Testi, Tek Yönlü Varyans Analizi (ANOVA) testi kullanılmıştır. Takım Birlikteliği ile Etkili İletişim düzeyleri arasındaki ilişki ise Pearson's Analizi ile belirlenmiştir. Analiz sonucunda takım birlikteliği envanterinde; cinsiyet, yaş, spor yılı, mevki değişkenine göre anlamlı farklılık görülmemiştir. Medeni durum değişkenine göre takım birlikteliği-görev puanları arasında anlamlı fark saptanmıştır. Etkili iletişim ölçeğinde; cinsiyet ve mevki değişkenine göre anlamlı fark görülmemiştir. Yaş ve medeni duruma göre etkili iletişim puanları arasında anlamlı fark saptanmıştır. Spor yılına göre ayırt etme-negatif çatışma puanları arasında anlamlı farklılık tespit edilmiştir. Korelasyon analizi sonucunda; takım birlikteliği ile etkili iletişim puanları arasında pozitif yönde ve orta düzeyde anlamlı ilişki tespit edilmiştir. Takım birlikteliği ve alt boyut puanları ile etkili iletişim ve kabul etme-pozitif çatışma puanları arasında pozitif yönde ve orta düzeyde ilişki saptanmıştır. Takım birlikteliği ve alt boyut puanları ile ayırt etme-negatif çatışma puanları arasında anlamlı ilişki saptanmamıştır. Bu hususta kulüp teknik üyeleri-sporcu iş birliği ile kulüp içi sosyal etkinliklere yer verilmesinin destekleyici bir unsur olacağı öngörülmektedir.

Anahtar Kelimeler: Takım Sporları, Takım Uyumu, Takım İletişim, Voleybol

INTRODUCTION

Individuals are constantly in contact in daily life (1). Therefore, the importance and value of the concept of communication are felt more and more today. The communication skill levels of individuals are effective in the success of all institutions, organizations, professions and scientific fields. In this context, communication is also considered to be an important concept in the field of sports. As a matter of fact, the intensive training systems and camp periods in which athletes are involved can negatively affect many areas of their lives. Athletes can be subjected to cruel criticism by performing in front of many people they have never seen and know before. In such cases, the high communication skills of the athletes and the opportunity to express their thoughts in the most accurate way can minimize possible problems. Therefore, athletes who are frequently in contact with their teammates, coaches, spectators and the media should have effective communication skills to protect their status and increase their sports performance (2).

One of the main ways to create a successful team is to ensure that individuals are integrated within the team. When team athletes provide team integration beyond being individuals, the ground is prepared for the emergence of high-level performances. In the field of sociology, team collaboration, which is identical with the concept of group collaboration, is defined as "the commitment state that holds the team or group together". Festinger et al. (3) refer to team collaboration as "all the forces that are effective in the coexistence of the group members" (4). Team success, which is parallel to team integration, needs to be carried out in a systematic and stable manner in terms of emotional and mental aspects. It is very difficult for teams that constantly experience negative fluctuations to ensure success and continuity (5,6). According to Deutsc (7), teams with high engagement tend to advance to the goal as a whole. So much so that while group engagement increases efficiency and success when it is revealed from the common goals of the group, it does not have the desired effect for success when it is revealed for individual reasons. Similarly, Seashore (8) states that while the success graph of teams with high group commitment increases, it becomes very difficult to talk about success for teams with low commitment (9). One of the basic elements of achieving success is the determination of the duties and responsibilities of individuals within the group. Task distributions within the team enable individuals to understand that they have different qualities and increase loyalty to the team. When evaluated in the sports world, this situation shows its effects with concepts such as team spirit, team integration, synergy and team play (10).

Team success is ensured by effective and continuous interaction between athletes. In other words, the communication that the athletes will establish with each other also shapes the success of the team. As a matter of fact, providing feedback to the athlete about his performance is provided by good communication and interaction within the club. For example; while all team players may be harmed by the decrease in the performance of a player in the volleyball branch where mutual interaction is high, it is not possible to talk about the same effect for the baseball branch within individual sports (11). In this regard, it is seen as an important element that volleyball players have good communication skills and ensure a group environment. The aim of this study is to examine the relationship between the group environment and effective communication skills levels in volleyball players.

MATERIAL AND METHOD

Research Model

In this study, a descriptive relational scanning model was used as one of the quantitative research methods. In the quantitative research method, events and situations are measured by making individuals concrete in such a way that they meet at a common point (12). The scanning method aims to collect data to determine certain characteristics in a group (13).

The Universe of the Research

The universe of the research consists of volleyball players in Turkey. The sample group of the study consists of 140 female and 53 male at professional and amateur levels, a total of 193 volleyball players. According to the categorization of Turkish Volleyball Federation player competing in the 1st league and 2nd league were professional and players competing in regional leagues were amateur.

Data Collection

Personal Information Form:

In order to reach the demographic information of the participants, a five-item personal information form (gender, age, marital status, sports year, position) prepared by the researcher was used.

Group Environment Questionnaire (GEQ):

The inventory developed by Carron et al. (14) was adapted into Turkish by Unutmaz et al. (15). The scale was consisted of 18 items and 4 sub-dimensions (individual attraction to group social, individual attraction to group task, group integration- social, group integration-task). These sub-dimensions were individual attraction to group social (1,3,5,7,9 items), individual attraction to group task (2,4,6,8 items), group integration-social (11,13,15,17 items) group integration-task (10, 12, 14, 16, 18 items). The inventory is of the Likert type of 9 and the items are "1=I disagree at all..... 9=I completely agree." The inventory contains reverse substances (1,2,3,4,6,7,8,11,13,14,17,18). The internal consistency coefficients of the inventory were calculated as α=.61 for the individual attraction to group social sub-dimension, α=.67 for the individual attraction to group task sub-dimension, α=.63 for the group integration- social sub-dimension and α=.65 for the group integration-task sub-dimension. The total internal consistency coefficient of the inventory was determined as α=.82 (15). In the study; the overall Cronbach's Alpha value of the scale was determined as α=.83, the task sub-dimension as α=.74, and the social sub-dimension as α=.65. When the literature is in the inventory; it is possible to come across studies in which task (2, 4, 6, 8, 10, 12, 14, 16, 18) and social (1, 3, 5, 7, 9, 11, 13, 15, 17) are used in two sub-dimensions (16, 17).

Scale for Effective Communication in Team Sports:

The scale developed by Sullivan and Feltz (18) was adapted by Alkan (19) to Turkish team athletes. The scale consists of 2 sub-dimensions and 15 items: acceptance and positive conflict (3,4,5,6,8,11,13,14,15), distinctiveness and negative conflict (1,2,7,9,10,12) sub-dimension. The scale is of the Likert type of 7 and the items are "1= Never.... 7= Always". The internal consistency coefficients of the scale were determined as α=.85 for the acceptance and positive conflict sub-dimension, α=.78 for the distinctiveness and negative conflict sub-dimension, and the total internal consistency coefficient of the scale as .85 (19). In the study; the overall Cronbach's Alpha value of the scale was determined as α=.84, the acceptance and positive conflict sub-dimension as α=.89, and the distinctiveness and negative conflict sub-dimension as α=.72.

Methodology

The Group Environment Questionnaire (GEQ), Scale for Effective Communication in Team Sports and personal information form were used as data collection tools. The participants filled the scales as online on Google Forms application.

Statistical Analysis

The sample size was determined as five times of the scale item count (49). According to Kolmogorov-Smirnov / Shapiro-Wilk test results, it was determined that the data showed suitability to the normal distribution. In the research, according to gender and marital status variables, differences between effective communication and group environment levels for sports teams were determined by student t-test; differences according to age, sports year and position variables were determined by one-way variance analysis (ANOVA) and Tukey multiple comparison test. Pearson's correlation analysis was used to determine the relationship between effective communication and group environment in volleyball players. In the study, SPSS 21.0 statistical package program was used for the analysis of the data. The research findings were given as number of people (n), standard deviation (sd) and mean ($\bar{x}$), and differences in importance level of 0.05 were considered significant.

Ethical Aspect of Research

The ethical report of the study was approved by Gümüshane University Scientific Research and Publication Ethics Board with the document dated 23.02.2022 and numbered 2022/1. Permission to use was obtained from the authors of the scales via e-mail. The scales were applied to the participants on a voluntary basis.

FINDINGS

Table 1. Demographic Characteristics of Athletes

Variables	Category	n	%
Gender	Female	140	72.5
	Male	53	27.5
Age	18-21	93	48.2
	22-25	62	32.1
	26 and older	38	19.7
Marital Status	Married	181	93.8
	Single	12	6.2
Sports Year	1-5 years	47	24.4
	6-10 years	77	39.9
	11 years and over	69	35.8
Position	Setter	30	15.5
	Setter's Diagonal	28	14.5
	Middle Blocker	39	20.2
	Hitter	66	34.2
	Libero	30	15.5

193 volleyball players, including 140 women (72.5%) and 53 men (27.5%) participated in the study. In terms of age, 93 people (48.2%) in the 18-21 age range, 62 people in the 22-25 age range (32.1%), and 38 people in the 26 and older age range (19.7%) participated. In the marital status variable, it is seen that 181 people are married (93.8%) and 12 people are single (6.2%). In the sports year, 47 people (24.4%) participated in the 1-5 range, 77 people in the 6–10- year range (39.9%), and 69 people (35.8%) in the 11 years and above range. In the position variable, it is seen that the setter player is 30 people (15.5%), the setter cross player is 28 people (14.5%), the middle player is 39 people (20.2%), the slammer player is 66 people (34.2%), and the libero player is 15.5 people (15.5%) (Table 1).

Table 2. T-Test Results on the Differences in Group Environment Questionnaire and Effective Communication Scale Scores by Gender and Marital Status Variable

Scales and Sub-Dimensions	Gender	n	$\bar{x}$	sd	t	p
Social	Female	140	6.24	1.45	-1.900	.059
	Male	53	6.67	1.30		
Task	Female	140	6.97	1.55	.127	.899
	Male	53	6.94	1.34		
Group Environment Questionnaire	Female	140	6.60	1.39	-.925	.356
	Male	53	6.81	1.22		
Acceptance and Positive Conflict	Female	140	46.98	12.33	-1.209	.228
	Male	53	49.26	9.75		
Distinctiveness and Negative Conflict	Female	140	26.82	7.58	-.213	.831
	Male	53	27.09	8.81		
Effective Communication Scale	Female	140	73.80	15.96	-.998	.319
	Male	53	76.35	15.51		
Marital Status						
Social	Married	181	7.04	1.30	1.724	.086
	Single	12	6.31	1.42		
Task	Married	181	8.18	.569	6.536	**.001***
	Single	12	6.88	1.50		
Group Environment Questionnaire	Married	181	7.61	.893	2.551	.120
	Single	12	7.43	1.35		
Acceptance and Positive Conflict	Married	181	58.25	5.22	6.519	**.001***
	Single	12	46.90	11.67		
Distinctiveness and Negative Conflict	Married	181	32.80	3.71	2.727	.070
	Single	12	30.50	7.96		
Effective Communication Scale	Married	181	91.08	7.45	3.876	**.001***
	Single	12	73.40	15.64		

*** p<0.05**

There was no a significant difference between group environment and sub-dimension scores according to gender (p>0.05). There was no a significant difference between effective communication and sub-dimension scores by gender (p>0.05). There was no a significant difference between group environment and social scores according to marital status (p>0.05). A significant difference was found between the task scores according to marital status (p<0.05). A significant difference was found between effective communication and acceptance-positive conflict scores according to marital status (p<0.05). There was no a significant difference between distinctiveness according to marital status and negative conflict scores (p>0.05) (Table 2).

Table 3. One-Way Analysis of Variance Results on the Differences in Group Environment Questionnaire Scores and Effective Communication Scale Scores by Age Variable

Scales and Sub-Dimensions	Age	n	$\bar{x}$	sd	f	p
Social	18-21	93	6.40	1.32	.121	.886
	22-25	62	6.35	1.59		
	26 and older	38	6.27	1.41		
Task	18-21	93	7.07	1.38	.740	.479
	22-25	62	6.78	1.49		
	26 and older	38	7.00	1.73		
Group Environment Questionnaire	18-21	93	6.74	1.22	.318	.728
	22-25	62	6.56	1.47		
	26 and older	38	6.63	1.47		
Acceptance and Positive Conflict	18-21	93	47.08	11.37	.262	.770
	22-25	62	47.72	10.79		
	26 and older	38	48.71	13.96		
Distinctiveness and Negative Conflict	18-21	93	25.03b	8.49	7.831	**.001***
	22-25	62	27.29b	6.94		
	26 and older	38	30.81a	6.45		
Effective Communication Scale	18-21	93	72.11b	15.14	3.060	**.049***
	22-25	62	75.01ab	15.08		
	26 and older	38	79.52a	17.79		

*** p<0.05**

There was no a significant difference between group environment and sub-dimension scores according to age (p>0.05). There was no a significant difference in effective communication and distinctiveness -negative conflict scores according to age (p<0.05). There was no a significant difference in acceptance-positive conflict scores according to age (p>0.05) (Table 3).

Table 4. Results of One-Way Analysis of Variance on the Differences Group Environment Questionnaire and Effective Communication Scale Scores by Sport Year Variable

Scales and Sub-Dimensions	Sports Year	n	$\bar{x}$	sd	f	p
Social	1-5 years	47	6.71	1.26	2.557	.080
	6-10 years	77	6.12	1.39		
	11 years and over	69	6.38	1.52		
Task	1-5 years	47	7.27	1.28	2.728	.068
	6-10 years	77	6.67	1.47		
	11 years and over	69	7.08	1.59		
Group Environment Questionnaire	1-5 years	47	6.99	1.13	3.031	.051
	6-10 years	77	6.40	1.33		
	11 years and over	69	6.73	1.46		
Acceptance and Positive Conflict	1-5 years	47	48.36	10.20	.164	.849
	6-10 years	77	47.11	10.71		
	11 years and over	69	47.65	13.68		
Distinctiveness and Negative Conflict	1-5 years	47	22.76b	8.61	11.253	**.001***
	6-10 years	77	27.07a	7.36		
	11 years and over	69	29.50a	6.88		
Effective Communication Scale	1-5 years	47	71.12	14.05	2.074	.129
	6-10 years	77	74.19	14.77		
	11 years and over	69	77.15	17.77		

*** p<0.05**

There was no a significant difference between group environment and sub-dimension scores according to the sports year (p>0.05). There was no a significant difference between effective communication and acceptance-positive conflict scores according to the year of sport (p>0.05). Significant differences were found in distinctiveness and negative conflict scores according to the sports year (p<0.05) (Table 4).

Table 5. One-Way Analysis of Variance Analysis on the Difference of Group Environment Questionnaire and Effective Communication Scale Scores According to Position Variable

Scales and Sub-Dimensions	Position	n	$\bar{x}$	sd	f	p
Social	Setter	30	6.53	1.40	1.003	.407
	Setter's Diagonal	28	6.00	1.40		
	Middle Blocker	39	6.25	1.60		
	Hitter	66	6.35	1.40		
	Libero	30	6.68	1.27		
Task	Setter	30	7.19	1.36	1.396	.237
	Setter's Diagonal	28	6.38	1.75		
	Middle Blocker	39	6.95	1.45		
	Hitter	66	7.05	1.35		
	Libero	30	7.10	1.64		
Group Environment Questionnaire	Setter	30	6.86	1.25	1.291	.275
	Setter's Diagonal	28	6.19	1.47		
	Middle Blocker	39	6.60	1.41		
	Hitter	66	6.70	1.26		
	Libero	30	6.89	1.38		
Acceptance and Positive Conflict	Setter	30	48.93	11.87	1.253	.290
	Setter's Diagonal	28	44.10	12.75		
	Middle Blocker	39	46.15	12.90		
	Hitter	66	48.25	10.93		
	Libero	30	50.03	10.23		
Distinctiveness and Negative Conflict	Setter	30	27.00	8.32	1.026	.395
	Setter's Diagonal	28	28.00	7.00		
	Middle Blocker	39	26.00	6.47		
	Hitter	66	25.95	8.72		
	Libero	30	29.00	8.10		
Effective Communication Scale	Setter	30	75.93	16.85	1.055	.380
	Setter's Diagonal	28	72.10	17.20		
	Middle Blocker	39	72.15	15.91		
	Hitter	66	74.21	15.01		
	Libero	30	79.03	15.11		

*** p<0.05**

There was no a significant difference between group environment and sub-dimension scores according to the position variable (p>0.05). There was no a significant difference between effective communication and sub-dimension scores according to the position variable (p>0.05) (Table 5).

Table 6. Pearson Correlation Analysis Results of the Relationship Between Group Environment Questionnaire Inventory and Effective Communication Scale Scores

			Scale for Effective Communication in Sports Teams		
			Acceptance and Positive Conflict	Distinctiveness and Negative Conflict	Total Point
Group Environment Questionnaire	Total Point	**r**	.603	.662	.430
		p	**.001***	193	**.001***
	Social	**r**	.524	.005	.389
		p	**.001***	.943	**.001***
	Task	**r**	.592	-.062	.406
		p	**.001***	.389	**.001***

*** p<0.01**

In the study, a positive and moderately statistically a significant relationship was found between group environment and effective communication total scores ($p<0.01$). A positive and moderate relationship was found between group environment and sub-dimension scores and effective communication and acceptance-positive conflict scores ($p<0.01$) (Table 6).

DICCUSION

In the research; it is aimed to determine the relationship between group environment and effective communication skill levels in volleyball players.

As a result of the research, there was no a significant difference between effective communication and sub-dimension scores by gender. When the literature studies are examined, it is found that the study findings are similar to the results of this research (11, 20, 21). On the other hand, the findings of the studies conducted by Kılcıgil et al. (22), Tepeköylü et al. (23) are not similar to the results of the current research. In addition to these results; there was no a significant difference between group environment and sub-dimension scores according to gender. As a result of the literature review, in the study conducted by Molla et al. (24), no a significant difference was found between the duty scores according to the gender variable. In the study conducted by Polat (25), there was no a significant difference in the team collaboration scores according to gender and it was seen that the findings supported the findings of this study. On the other hand, in the study conducted by Molla et al. (24), a significant difference was found between group collaboration-social scores according to gender. In the study conducted by Sezer (26), a significant difference was determined between the group collaboration scores according to gender and the findings were not similar to the findings of this study. It is predicted that the difference between the findings is due to the psychosocial characteristics of the branches and individuals.

Significant differences were found in effective communication and distinctiveness and negative conflict scores according to age. There was no a significant difference in age-based acceptance and positive conflict scores. When the difference for the total score of the scale was examined among the groups, it was seen that those in the age range of 26 and over had higher values than the 18-21 age range. When it is examined for the sub-dimension of distinctiveness and negative conflict; it was found that those who were 26 and over had higher scores than those aged 18-21 and 22-25. When the literature studies are examined, it is possible to come across studies that are similar to the findings of this study (20, 27, 28, 29). On the other hand, the study findings made by Ulukan (11) Tepeköylü et al. (23) do not support the findings of the current study. In addition to these results; there was no a significant difference between group environment and sub-dimension scores according to age. As a result of the literature review, in the study conducted by Polat (25), there was no a significant difference between individual attractiveness duty-social scores according to age variable. In the study conducted by Yolcu (30) and Solmaz (31), there was no a significant difference between team collaboration scores according to age. In the study conducted by Şimşek (32), there was no a significant difference between the group collaboration scores according to age and it was seen that the findings supported the findings of this study. On the other hand, in the study conducted by Polat (25), there was a significant difference between group collaboration duty-social scores according to age variable. In the study conducted by Tatar (33), a significant difference was found between group collaboration and duty scores and the findings were not similar to the findings of the current study. The difference between the findings can be related to the dominance of the hierarchical system in the volleyball branch and the "awareness of being a team" of the athletes.

There was no a significant difference between the total score of the effective communication scale according to the sports year. There was no a significant difference between effective communication and acceptance-positive conflict scores according to the sports year. There was a significant difference in distinctiveness and negative conflict scores according to the sports year. When it was examined which groups the difference was between was examined, it was found that those who had 1-5 years of sports years had higher values than those who had 6-10 years and 11 years and over. As a result of the literature review, it is possible to come across studies that support the result of the current research (28, 34, 35, 36, 37). On the other hand, the study findings made by Savcı (20), Abakay and Kuru (38) are not similar to the findings of the current study. In addition to these results; according to the sports year variable, no a significant difference was found between group environment and sub-

dimension values. As a result of the literature review, in the study conducted by Polat (25), there was no a significant difference between group collaboration duty-social and individual attractiveness-duty scores according to the sports year variable. In the study conducted by Yolcu (30), no a significant difference was found between team collaboration scores according to sports year. In the study conducted by Şimşek (32), there was no a significant difference between the group collaboration scores according to the sports year and it was seen that the findings supported the findings of this study. On the other hand, in the study conducted by Polat (25), a significant difference was determined between individual attractiveness-social scores according to the variable of sports year. In the study conducted by Tatar (33), a significant difference was found between individual attractiveness-duty scores according to the sports year and the findings were not similar to the findings of the current study. It is thought that the difference between the findings is related to the level of activity and social activity of the athletes within the club they belong to.

According to the position variable, there was no a significant difference between effective communication and sub-dimension scores. When the literature studies are examined, it is possible to come across studies of a similar kind with the results of this current research (28, 39). On the other hand, in a qualitative study conducted by Bottino (40), it was stated that the positions of athletes are a determining factor in coach-athlete communication. Similarly, in the study conducted by Hacıcaferoğlu and Bakırcı (41), a significant difference was found between communication scores according to the position variable and the findings were not similar to the findings of the current study. In addition to these results; according to the position variable, there was no a significant difference between group environment and sub-dimension scores. As a result of the literature review, in the study conducted by Polat (25), no a significant difference was found between the team collaboration sub-dimension scores according to the position variable. In the study conducted by Tümbaşer (42), there was no a significant difference between the group collaboration scores according to the position variable and it was seen that their findings supported the findings of the current study. On the other hand, in the study conducted by Moralı and Doğan (43), it was stated that team collaboration was ensured after the training process of athletes working in different positions. In the study conducted by Carron (44), it was stated that team positions are one of the basic elements of group collaboration and the findings are not similar to the findings of this study. It is possible to say that the difference between the findings is due to the fact that the athletes put the team's success ahead of their individual achievements.

A significant difference was found between the total score of effective communication according to marital status. When the sub-dimensions are examined; there was no a significant difference between distinctiveness by marital status and negative conflict scores. According to marital status, there was a significant difference between acceptance-positive conflict scores. In this regard, it was found that those who were married have higher communication scores than single athletes. As a result of the literature review, it was determined that the results of the research conducted by Aksoy (45), Boz et al. (36), Akbaş (46) were similar to the results of the current research. On the other hand, the study findings made by Akgül and Mutlu (34) Kumcağız et al. (47) are not similar to the findings of the current study. In addition to these results; there was no a significant difference between group environment and social scores according to marital status. According to marital status, there was a significant difference between the task scores. In this regard, it was determined that those who are married have higher values compared to those who are single. When the literature studies were examined, no a significant difference was found between the team collaboration scores according to the marital status variable in the study conducted by Tatar (33). In the research conducted by Şimşek (32), there was no a significant difference in group collaboration scores according to marital status and the findings are similar to the results of the current research. It is thought that the difference between the findings may be due to the fact that married athletes undertake a mission to create a family environment within the team.

Finally, a positive and moderately a significant relationship was found between group environment scores and effective communication scores in volleyball players. A positive and moderate relationship was found between group environment and sub-dimension scores and effective communication and acceptance-positive conflict scores. There was no a significant relationship between group environment and sub-dimension scores and distinctiveness -negative conflict scores.

There have been no studies on the relationship between the two scales in the literature, but similar studies have been identified. Boz et al. (36) found that as the communication levels of sports managers increase, the motivation of employees to work also increases. Abakay and Kuru (38) stated in their study that as the level of communication of female athletes with their coaches increased, their motivation for success also increased. In another study, Güzel et al. (48) found that team communication and collaboration affect team success. The studies mentioned in the literature coincide with the findings of this study. In this regard, it is possible to say that while team collaboration increases, intra-team communication also increases in volleyball players, and as team collaboration decreases, effective communication within the team also decreases. The fact that the concepts of communication and collaboration are related in the volleyball branch within the team sports supports the hypothesis of the study. As a matter of fact, volleyball is thought to be a sport that is open to harmony and interaction within the team. It is thought that the fact that athletes have communication skills will bring success. So much so that athletes spend time together on and off the field and become a whole in both their social and sports lives. At this point, it should be noted that the technical members of the club (coach, manager, conditioner, etc.) play an important role. In particular, it is thought that it may be useful to evaluate a lost competition as a team failure compared to individual reasons. Social activities within the club are seen as another supporting element.

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Process Assessment of Fencer's Parents within the scope of the Covid-19 Normalization Steps

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Abstract

The objective of this study is to measure and construe the opinions of the parents of athletes who are actively participating in competitions in our country and who are licensed by the Turkish Fencing Federation for the 2019-2020 season, regarding the organizations to be planned and the issues to be paid attention, within the scope of the Covid-19 normalization steps. The study group comprises 410 parents in total who take place on the list of licensed athlete parents of the Turkish Fencing Federation in 2019-2020. An online data collection form was used as a data collection tool in this study, which was structured through the qualitative research method. The survey form, which was drawn up by the researcher by taking expert opinion, consisting of a total of nine questions, and devised to learn the opinions of the participants on the subject matter of the study, includes multiple-choice and open-ended question types. In this study conducted in collaboration with the Turkish Fencing Federation, the respondents answered the questionnaire online via the website of the respective federation and took part in the study voluntarily. Consent regarding the study was presented in the "Remarks" section of the form to the participants for approval. In the analysis process of the data obtained, the data analysis program called MAXQDA Analytics Pro 2018 (Release 18.2.4) (Professional Data Analysis Software for Qualitative and Mixed Methods) was used. While closed-ended questions were summarized by indicating percentages, the content analysis method was used in the process of analyzing open-ended question and answer reports. The data obtained were visualized with the help of frequency tables and code maps. Finally, some of the opinions of the participants, which were coded, were directly conveyed by interpreting the findings obtained through the tables and code maps. For this study, an approval was received from the Ethics Committee for Non-Invasive Clinical Research of the School of Sport Sciences of Selcuk University. It was determined as a result of the study that the Covid-19 pandemic that poses impacts on the entire world affects the attitudes of parents of athletes to participate in organizations. In the activities planned to be organized, the sub-codes like attending without an audience, open-air competitions, provision of spaciousness and ventilation means in the selection of a competition hall, and risk approval notification are classified. In addition, arrangements for the priorities of the parents of athletes in the organizations to be held within the scope of the Covid-19 normalization steps of the respective federation were ensured by presenting the Turkish Fencing Federation with the report drawn up as a result of the study.

Keywords: Covid-19, Fencing, Fencer's Parents

Covid-19 Normalleşme Adımları Kapsamında Eskrimci Ebeveynlerinin Süreç Değerlendirmesi

Özet

Bu araştırmanın amacı, ülkemizde faal olarak yarışmalara katılan ve Türkiye Eskrim Federasyonu 2019-2020 yılı sezonu vizeli sporcu ebeveynlerinin Kovid-19 normalleşme adımları kapsamında, planlaması yapılacak olan organizasyonlar ve dikkat edilecek hususlarda görüşlerini ölçmek ve yorumlamaktır. Araştırma grubunu; 2019-2020 yılında Türkiye Eskrim Federasyonu vizeli sporcu ebeveynleri arasında yer alan 410 ebeveyn oluşturmaktadır. Nitel araştırma metoduyla kurgulanan bu araştırmada; veri toplama aracı olarak online veri toplama formu kullanılmıştır. Araştırmacı tarafından uzman görüşü alınarak hazırlanmış, toplam 9 sorudan oluşan ve katılımcıların, araştırma amacına yönelik görüşlerini öğrenmek amacıyla kurgulanan soru formu çoktan seçmeli ve açık uçlu soru tiplerini içermektedir. Türkiye Eskrim Federasyonu ile ortak hareket edilerek gerçekleştirilen bu çalışmada, katılımcılar ilgili federasyonun web sitesi aracılığıyla online ortamda soru formunu cevaplamış olup, çalışmaya gönüllü olarak katılmışlardır. Araştırma ile ilgili onam, formun açıklama kısmında katılımcıların onayına sunulmuştur. Elde edilen verilerin analiz sürecinde ise MAXQDA Analyctis Pro 2018 (Release 18.2.4) (Nitel ve Karma Yöntemler için Profosyonel Veri Analiz Yazılımı) isimli veri analiz programı kullanılmıştır. Kapalı uçlu sorular yüzde verilerek özetlenirken, açık uçlu soru cevap raporlarını analiz etme sürecinde içerik analizi metodu kullanılmıştır. Elde edilen veriler, frekans tabloları ve kod haritaları yardımıyla görselleştirilmiştir. Nihai olarak tablo ve kod haritaları ile elde edilen bulgular yorumlanarak, katılımcıların kodlama yapılan bazı görüşleri doğrudan aktarılmıştır. Bu araştırma için Selçuk Üniversitesi Spor Bilimleri Fakültesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulundan onay alınmıştır. Araştırma sonucunda; Tüm dünyayı etkileyen Covid-19 salgınının sporcu ebeveynlerinin organizasyonlara katılım tutumlarını etkilediği tespit edilmiştir. Düzenlenmesi planlanan faaliyetlerde; seyircisiz katılım, açık hava müsabakaları, Müsabaka Salon Seçiminde genişlik ve havalandırma olanaklarının sağlanması, risk onay bildirimi gibi alt kodlar tasnif edilmiştir. Ayrıca çalışma sonucunda hazırlanan rapor; Türkiye Eskrim Federasyonuna sunularak, ilgili federasyonun Covid-19 normalleşme adımları kapsamında düzenleyeceği organizasyonlarda sporcu velilerinin önceliklerine yönelik düzenleme yapılmasına olanak sağlamıştır.

Anahtar Kelimeler: Covid-19, Eskrim, Sporcu Velileri

INTRODUCTION

Globalization, with the effects of changing user demands and digital transformation; has been one of the major challenges facing sports organizations. The COVID-19 epidemic, which has deeply affected the whole world in recent years and brought serious problems with the death of thousands of people, is a global epidemic that is still being studied on. Many athletes and sports personnel are also affected by the various effects of this epidemic (2). COVID-19 is a deadly type of corona virus that affects the whole world, especially in 2020, with a risk of transmission through droplets.

With the COVID-19 pandemic, many governments and administrations have taken strict measures to contain the rapid spread of the disease. Unprecedented steps were taken, including quarantines, banning all organized and social gatherings (including sporting events), and restricting all non-essential travels (8). Participating in sports and exercises, which has indispensable significance for health, especially with the epidemic; started to be discussed with the pandemic. Many league and sports events were suspended. The 2020 Olympic games have been postponed due to the pandemic (10). In order to reduce the risk of transmission with the measures taken by national governments, sports activities, especially in indoor sports halls, were suspended for a long period (7).

There is limited data available to determine especially when it is safe to return to sports, after the COVID-19 pandemic. Also, the prolonged interruption caused by COVID-19 makes it difficult to discern best practices for a safe return to sport. There is a clear need to develop and adopt consistent measures for the resumption of sporting activities, including training and competition, that prioritize the health and well-being of athletes while protecting coaches, ancillary staff and audience (5). According to Nauright et al. (6), The suggestion that the sports world known in 2019 will not be the same as the world of sports that took place or is taking place in 2022, and that new sports forms will emerge, has been revealed by many studies.

In different sports categories, according to the specific characteristics of the relevant category, Measures have been taken to start activities after the COVID-19 pandemic. Many measures such as holding matches without audience in branches that appeal to large groups of fans, screening athletes and other officials for COVID-19 before the competition in professional leagues (testing, symptom observation, etc.), holding some amateur sports matches with limited participants of a regional nature can be counted in this way. Especially many scientists and sports experts working on health have expressed their opinions about returning to sports after the COVID-19 pandemic. However, the perspectives of parents, who are the focus of decision, on sports after the pandemic, especially in the participation of children under the age of 18 in these activities, are of vital importance for children. In this study, it was planned to reveal the point of view of a different group, especially on the precautions to be taken before the activities planned to be carried out in the fencing branch. Within the scope of the study, it has been tried to compile the measures that the parents of the fencers want to be taken in the post-pandemic fencing matches.

The purpose of this research is to measure and interpret the opinions of the parents of athletes who actively participate in competitions in our country and who are licensed by the Turkish Fencing Federation 2020, on the organizations to be planned and the issues to be considered within the scope of the COVID-19 normalization steps.

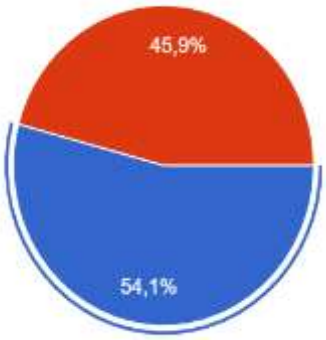
METHOD

The research group is consisting of 410 athletes' parents who participated in the competitions organized by the Turkish Fencing Federation in 2020. In this research, which was designed with the qualitative research method; An online data collection form was used as a data collection tool. The questionnaire, which was prepared by the researcher by taking expert opinion, consisting of a total of 5 questions and designed to learn the opinions of the participants on the purpose of the research, includes multiple choice and open-ended question types. In this study, which was carried out in cooperation with the Turkish Fencing Federation, the participants answered the questionnaire online through the website of the relevant federation and participated in the study voluntarily. Consent about the research was submitted to the approval of the participants in the explanation part of the form.

In the analysis process of the obtained data, the data analysis program named MAXQDA Analytics Pro 2018 (Release 18.2.4) (Professional Data Analysis Software for Qualitative and Mixed Methods) was used. While closed-ended questions were summarized by giving percentages, content analysis method was used in the process of analyzing open-

ended question and answer reports. The obtained data were visualized with the help of frequency tables and code maps. Approval for this study was obtained from the Non-Interventional Clinical Research Ethics Committee of the Faculty of Sport Sciences, Selcuk University.

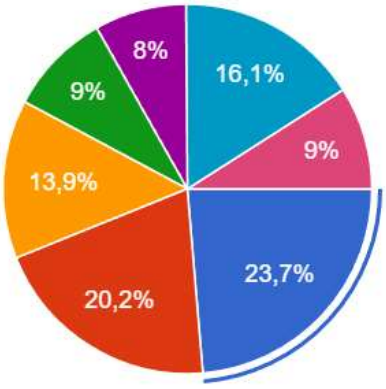
FINDINGS



Female : 54,1% (n=222)

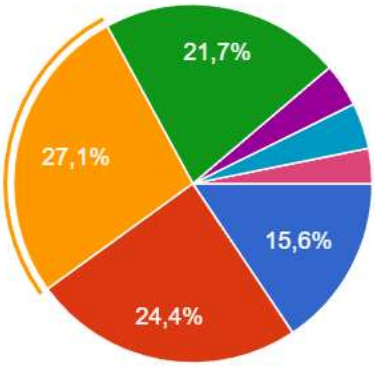
Male : 45,9% (n=188)

Figure 1. What is your gender?



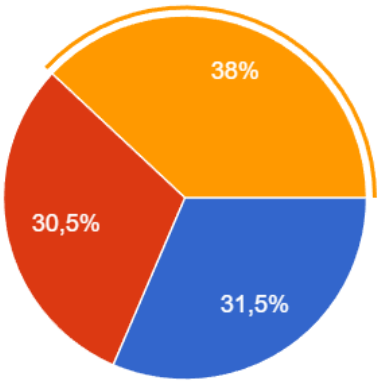
1 : 23,7% (n=97)
2 : 20,2% (n=83)
3 : 13,9% (n=57)
4 : 9% (n=37)
5 : 8% (n=33)
6-10 : 16,1% (n=66)
11 and Above : 9% (n=37)

Figure 2. How many competitions did you participate in (national-international) during the 2019-2020 season?



U10 : 15,6,% (n=64)
U12 :24,4% (n=100)
U14 : 27,1% (n=111)
U17 : 21,7% (n=89)
Junior : 3,9% (n=16)
Senior 7,3% (n=30)

Figure 3. What is the age category of the athlete you are the parent of?



Yes : 31,5% (n=129)

No : 38% (n=156)

If the competition is held outdoors, I will also participate : 30,5% (n=125)

Figure 4. As part of the Covid-19 normalization steps, a national tournament etc. will be held in August. If the event is organized, will you participate?

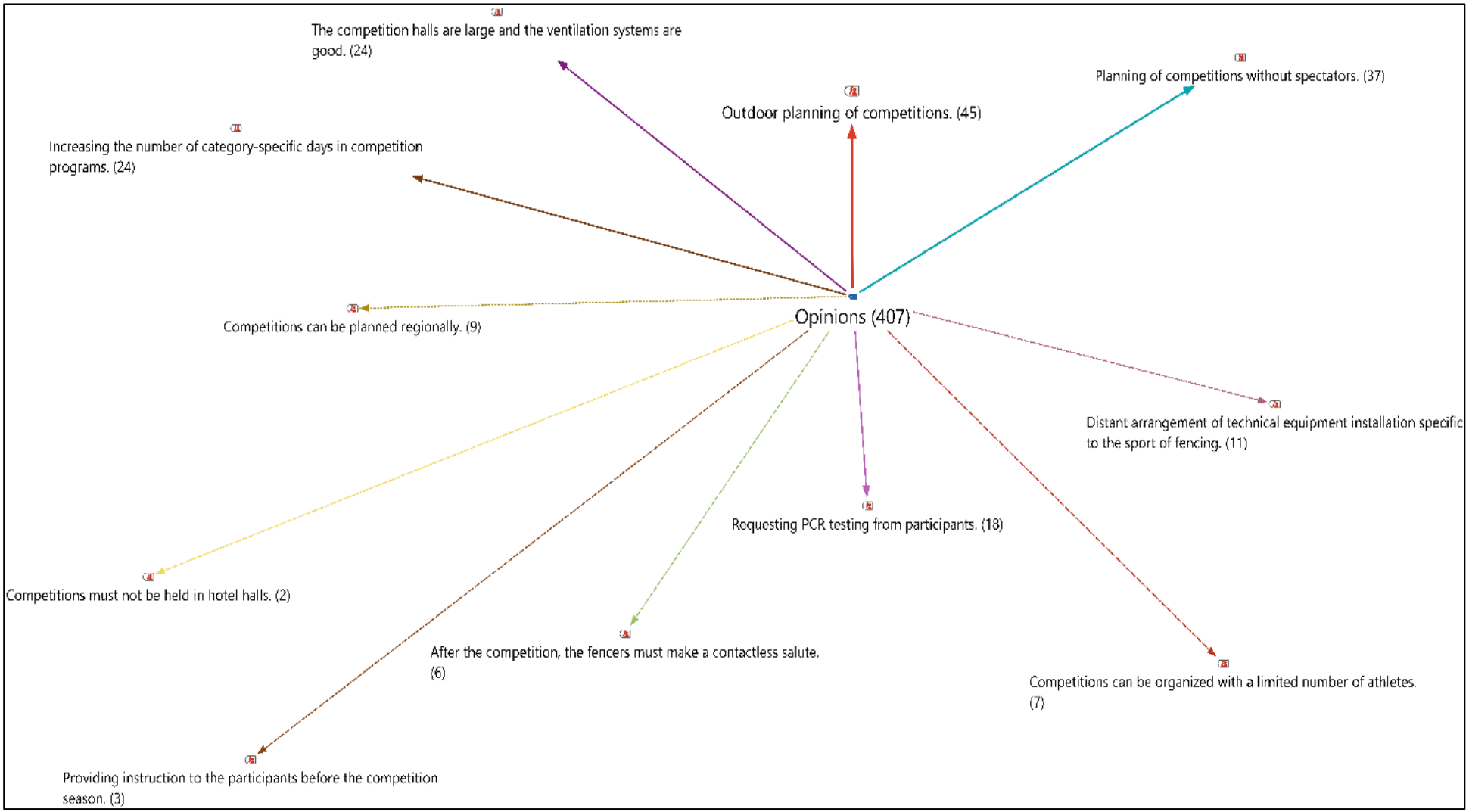


Figure 5. What are your suggestions about the measures in case of starting activities within the scope of Covid-19 normalization steps?

Within the scope of the research, 410 mothers and fathers were reached, and it was determined that the majority of the participants were female participants with a ratio of 54,1% (n=222). The categories of the athletes, of which more than half of the participants are parents, were observed as U10-U12 and U14 age categories. One of the research questions is on the determination of how many competitions the athletes participated in the 2019-2020 season, and 56,1% of the athletes to whom the participants were related participated in 3 or more competitions in the said season. As of the year the research was conducted, 38% (n=156) of the participants stated that they would not participate in the competitions, while 31,5% (n=129) stated that they would participate in the planning and realization of activities in August 2020. In the event that the competitions in the sub-answers of this question are planned in an outdoor environment, 125 people marked the conditional choice of participation in the activities with a ratio of 30,5% (n=125).

The open-ended question of the research; *''What are your suggestions about the measures to be taken in case of starting activities within the scope of Covid-19 normalization steps?''* was answered by 407 participants. The answers given by the participants in writing were classified by the content analysis method with the help of codes and sub-codes. While coding, the use of masks, attention to hygiene, frequent hand washing and social distance-themed measures recommended by the World Health Organization and almost all health authorities to protect against viruses and epidemics were ignored (9). It was determined that many of the participants expressed their opinions on these issues first, and they were not coded as sub-codes because the said measures are of vital importance not only in sports events, but also in daily life, and because they are measures with high awareness by everyone. The Turkish Fencing Federation announced a scheme including the aforementioned measures to all its stakeholders in the form of an infographic during the epidemic.

186 statements were coded under 11 different sub-codes about the measures to be taken in case of starting activities within the scope of Covid-19 normalization steps. The distribution of the expressions in question is explained in detail in the code map available in figure 5. The suggestions of the participants about the precautions were shaped under 11 different codes;

1- To plan the competitions outdoor.

2-To plan competitions without spectators.

3-The competition halls should be large and the air conditioning systems should be in good condition.

4- To increase the number of category-based days in the competition programs.

5-To rdemand PCR testing from participants.

6-Distant arrangement of technical equipment installation specific for the sport of fencing.

7-Competitions should be planned regionally.

8-Competitions should be organized with a limited number of athletes.

9-After the competition, fencers must salute distantly.

10- To instruct participants before the competition season.

11-Competitions must not be held in hotel halls.

Among the suggestions of the parents participating in the research, 4 issues with more than 100 statements in total attract attention. The first of these is the organization of the competition organizations to be planned outdoors, and the sample statements of some participants on the subject are as follows.

("Participant 370: Training and tournaments are held outdoors as much as possible.")

("Participant 372: Organizing tournaments in open areas, as much as weather conditions permitting.")

("Participant 164: Covered and open areas can be preferred.")

Some examples of the suggestions in the statements of the participants about the planned competitions to be held without audience are as follows.

("Participant 408: Parents should not allowed into the competition hall.")

("Participant 84: Athletes, parents or coaches who do not have a job in the hall should wait outside.")

("Participant 53: Parents or spectators should not be allowed into the area so that it is not too crowded.')

Parents who participated in the research focused on the hall and ventilation systems where fencing competitions will be held, another issue that they attach great importance to the precautions to be taken in case of starting the organizations and their views are exemplified as follows.

("Participant 333: I expect the ventilation systems of the tournaments to be held in accordance with the rules.")

("Participant 181: Continuous operation of air conditioners or open windows in order to have fresh air in the hall.')

("Participant 373: Selection of large and hygienic halls.")

One of the issues that the participants especially emphasized was that the competition programs should be spread over more days or time intervals, and sample expressions were as follows.

("Participant 300: Preventing the density of athletes by performing activities in different branches on different days.")

("Participant 170: By increasing the number of days, the number of athletes in the hall can be reduced.")

("Participant 24: Planning tournaments in one category, not all age groups and categories, will avoid crowds.')

In addition to the statements made by the parents participating in the research about the precautions and described with examples above; Suggestions were determined that the participants should be divided into regional groups, PCR tests should be requested from the participants, no greeting at the end of the competitions and small hotel halls should not be used.

RESULT

The emergence of COVID-19 has created significant difficulties in the conduct of sports competitions and mass events. With the mode of transmission of the disease and the possibility of adverse health consequences, it has become imperative above all to keep our athletes safe (1). The idea that an understanding based on keeping the health of athletes safe should be adopted as a basis has been expressed in many academic studies. Ensuring the control of the health routines of the athletes by the sports physicians will play an important role in preventing the disease. In order to reduce the risk of infection, this precaution and follow-up system should be operated well (11).

It can be said that it is not a long-term sustainable situation for the fencing branch, whether outdoor organizations are possible or not, as stated by the majority of the research participants. In the study of Hedenburg et al. (3), it was emphasized that although outdoor sports activities sound logical at first, they cannot find enough space or if the participants become crowded, they will bring some problems. Likewise, the realization of sports events without audience will have a negative effect on professional sports branches, especially in economic terms (4).

Due to the nature of fencing, it can be said that it is possible to easily apply most of the generally accepted measures in order to reduce the risk of transmission of the disease, especially due to the lack of close contact. In this research, cooperation was made with the Turkish Fencing Federation within the scope of Covid-19 normalization steps, and the results of the research were presented to the authorities in a report. In the light of the report, the normalization steps for the branch were arranged with new and original rules.

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The Effect of Different Training Methods on Aerobic Performance and Some Respiratory Parameters in Young Soccer Players

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Abstract

The aim of this study is to examine the effects of different training methods on aerobic performance and respiratory parameters in young soccer players. For this purpose, fourty healthy young male soccer players participated in the study. The mean age of the participants was 16.72± 1.09 years, their average height was 172.45± 5.56 cm and their body weight average was 62.79± 8.91 kg. The study protocol was approved by the Selcuk University Faculty of Sport Sciences Ethics Committee. Different training methods applied in the study were applied in addition to routine training programs 3 times a week for 8 weeks. Fourty soccer players who participated in the study were divided into 5 groups as the control group (CG), small sided games (SSG), transition in SSG (TSSG), high intensity interval training (HIIT) and low intensity continuous training (LICT) groups. Three measurements were made for aerobic performance (VO2max), lactate levels and rating of perceived exertion (RPE). And also, two measurements were applied for respiratory parameters. As a result, significantly increased the VO2max levels of the other groups except the SSG group. LICT significantly decreased lactate levels. RPE were found to be significantly higher in the HIIT in all three measures. It provided significant increases in force vital capacity (FVC) and the forced expiratory volume in 1 second (FEV1) levels of LICT and HIIT groups. There was a significant decrease in the FEV1/FVC levels of the LICT and the peak expiratory flow (PEF) levels of the HIIT. As a result, different trainings applied for eight weeks significantly improved aerobic performance and decreased lactate levels. It resulted in different changes in RPE levels and respiratory parameters.

Keywords: Aerobic performance, respiratory system, soccer.

Genç Futbolcularda Farklı Antrenman Yöntemlerinin Aerobik Performans ve Bazı Solunum Parametrelerine Etkisi

Özet

Bu çalışmanın amacı genç futbolcularda farklı antrenman yöntemlerinin aerobik performans ve solunum parametreleri üzerine etkilerini incelemektir. Bu amaçla, çalışmaya sağlıklı 40 genç erkek futbolcu katılmıştır. Katılımcıların yaş ortalamaları 16.72± 1.09 yıl, boy ortalamaları 172.45± 5.56 cm ve vücut ağırlığı ortalamaları 62.79± 8.91 kg olarak tespit edilmiştir. Çalışma protokolü Selçuk Üniversitesi Spor Bilimleri Fakültesi girişimsel olmayan etik kurulu tarafından onaylanmıştır. Çalışmada uygulanan farklı antrenman yöntemleri, 8 hafta boyunca haftada 3 kez rutin antrenman programlarına ek olarak uygulanmıştır. Çalışmaya katılan 40 futbolcu, kontrol grubu, sınırlı alan oyunları (SAO), sınırlandırılmış alanlarda geçiş oyunu (SAGO), yüksek şiddetli interval antrenman (YŞİA) ve

düşük şiddette sürekli antrenman (DŞSA) grubu olmak üzere 5 gruba ayrılmıştır. Aerobik güç (maksVO2), laktat ve algılanan zorluk düzeyi (AZD) için üç ölçüm yapılmıştır. Solunum parametreleri içinse iki ölçüm uygulanmıştır. SAO grubu dışındaki diğer grupların maksVO2 seviyelerini önemli ölçüde artırmıştır (P<0.05). DŞSA laktat seviyelerini önemli ölçüde azaltmıştır (P<0.05). Her üç ölçümde de AZD'nin YŞİA'da önemli ölçüde daha yüksek olduğu bulunmuştur (P<0.05). DŞSA ve YŞİA gruplarının FVC ve FEV1 düzeylerinde anlamlı artışlar sağlamıştır (P<0.05). DŞSA'nın FEV1/FVC seviyelerinde ve YŞİA'nın PEF seviyelerinde önemli bir düşüş gözlemlenmiştir (P<0.05). Sonuç olarak, 8 hafta boyunca uygulanan farklı antrenmanlar aerobik performansı önemli ölçüde iyileştirirken ve laktat düzeylerini düşürmüştür. AZD seviyelerinde ve solunum parametrelerinde ise farklı değişiklikler meydana getirmiştir.

Anahtar Kelimeler: Aerobik güç, futbol, solunum parametreleri,

INTRODUCTION

''Citius, Altius, Fortius'' were coined by Pierre de Coubertin in 1894 as an Olympic slogan after the formation of the International Olympic Committee. The spirit of the motto faster, higher, stronger encompasses the holistic aspirations of the Olympic movement as well as the importance of an athlete's physical prowess. The slogan calls for designing training methods designed to prepare all competitors, including the youngest, to be the best in the world (17). As a reflection of this spirit, today's success is determined by very small details, while in some moments faster contraction of a motor unit or degrees in less than a second make a big difference (31). Soccer which is one of the branches that attract the most attention in today's sports, where such details are of great importance, and which drags the masses after it, is followed with great excitement.

Soccer is the world's most popular sport, played daily by millions of people at different levels of expertise, both professionally and for fun (42). Soccer which is constantly developing and where competition reaches high levels; technical, tactical, physical, psychological and physiological factors. In addition, it is stated that in parallel with the developments in soccer, the technical, tactical skills and physical capacities of soccer players increase day by day (1,9).

When a soccer match is analyzed; running parameter stands out as the dominant activity. Soocer players cover a distance of approximately 8-12 km at or near the anaerobic threshold (approximately 90% of maximal heart rate). This activity is exhibited at 75% of the average maximal oxygen consumption (maxVO2) of soccer players (37,13). In addition, the aerobic and anaerobic capacity of soccer players can affect the outcome of a match. Therefore, it is also important to determine the aerobic and anaerobic capacities of the athletes (3).

Considering the situations mentioned above, with this study; In addition to the training routines applied in the preparation period, different training methods on young soccer players; It is aimed to examine the changes in aerobic performance and some respiratory parameters.

MATERIAL & METHOD

Participants

Forty healthy young male soccer players who actively playing soccer participated in the study. The measurements of the participants were carried out in the Performance Laboratory of the Faculty of Sport Sciences of Selcuk University and grass field of Cumra Municipality. Descriptive information of the participants is given in Table 1. The protocol of the study was approved by Selcuk University Faculty of Sport Sciences non-interventional clinical research ethics committee with the decision numbered 40990478-050.99 and dated 28.01.2020.

Table 1. Descriptive statistics table showing participants' age, height, body weight, body mass index and MaxHR (n= 40).

Variables	Mean	Standart Deviation (SD)
Age (years)	16,72	1,09
Height (cm)	172,45	5,56
Body weight (kg)	62,79	8,91
Body mass index(kg/m^2)	20,78	2,31
MaxHR (beats/min)	203,30	1,07

Experimental design

Table 2. The Yo-yo level 1 test applied for the training of the participants.

Variables	Groups	Mean	SD	MIN	MAX
YO-YO (m)	CG	1605	610,83	940	2440
	TSSG	1612,50	573,305	900	2480
	SSG	1657,50	768,482	600	2680
	HIIT	1665	474,823	1040	2300
	LICT	1607,50	258,554	1000	1780

CG: Control Group, **TSSG:** Transition game group in SSG's, **SSG:** Small sided games, **HIIT:** High intensity interval training group, **LICT:** Low intensity continuous training

Yo-yo level 1 test (as a pre-test) was applied, and study groups were determined according to the Yo-yo level 1 test data in order to provide clearer results and a homogeneous distribution of the training loads performed. Participants were divided into 5 groups and each group consisted of 8 people.

Control group (CG)

Participants in the control group (CG) only continued soccer training in the pre-season period and did not do any additional training.

Low intensity continuous training (LICT)

In addition to the pre-season soccer training, a continuous running protocol was applied for 45 minutes at 70% of the maximum heart rate (maxHR) of the players immediately after the end of the unit training (24). In long-term jogs applied as additional training, the participants' HR was kept at the desired levels by means of polar watches worn by the participants.

High intensity interval training group (HIIT)

In addition to the pre-season period soccer training in the high-intensity interval training (HIIT) group, a running protocol was applied for 90-95% of the maximum heart rate (maxHR) of the athletes for 15 seconds immediately after the end of the unit training. In 70% of maxHR, a high-intensity interval running protocol was applied with a rest period of 15 seconds, with a total of 8 repetitions, 3 sets and 3 minutes of rest between sets (24). In high-intensity interval runs applied as additional training, the participants' HR was kept at the desired levels by means of polar watches worn by the participants.

Small sided games (SSG)

In addition to the pre-season soccer training for small sided games (SSG) group athletes, 4x4 small sided games in a 30x30 m (112.5 m2 per person) field immediately after the end of the unit training (38) 3 sets for 4 minutes and 3 minutes rest between sets applied with.

Transition game group in SSG's (TSSG)

In addition to the pre-season soccer training in the limited areas, after the completion of the unit training, 4x4 SSG (38) is applied in the first limited area, which is 30x 30m (112.5m2 per person), in addition to the preparation period football training, with the whistle of the enforcer at the 50th second. The athletes were allowed to pass in the second area, which is 35 meters ahead of the same dimensions. Transition games were applied for 4 minutes with 3 sets and 3 minutes rest between sets. At the end of the training of all groups, 10 minutes of jog and stretching movements were applied to the participants. Exercises were applied 3 days a week (Monday-Wednesday-Friday) for 8 weeks in addition to football training (41).

Collection of data

In this test, which is similar to the running and movement examples of a soccer match, the intermittent endurance performance of soocer players and their ability to recover after vigorous exercises were evaluated. Yo-yo test 1st measurement was done before the 8-week training program, 2nd measurement was done on the day following the last training of the 4th week (Saturday), and the 3rd measurement was done at the end of the 8-week training.

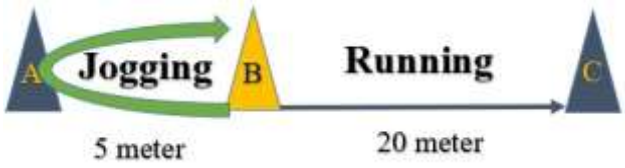

Figure 1. Yo-Yo Intermittent Recovery Level 1 Test

Yo-Yo level 1 test protocol: The running area for the test is shown in the figure above. During the test, the participants start running from B and run to C,

and as soon as they press or after pressing the line at that point, the signal sounds and the subject runs to B again and must reach the line before or during the beep. At points B and A, the participants jog towards the starting point and this cycle is repeated with the signal tone. While the initial speed is 10km/h, this cycle is applied with 10s rest intervals at speeds that increase over time. Try to do as many repetitions as possible. The beep sound sent by the CD player enabled the participants to adjust their speed accordingly during the test. If the participants came later than the two-time sound, the test was completed and the distance covered (including the last run that was not completed) was calculated as the test result (10) and the estimated maxVO2 values were determined (3).

Yo-Yo ATS1 test: maxVO2 (ml/min/kg) = ATS1 distance (m) X 0.0084 + 36.4 (3).

Determination of blood lactate

Lactate determinations of the participants in the 1st week, after the first training day (1st training day-Monday), after the last training of the 4th week (12th day-Friday) and at the end of their 8-week training (24th training day-Friday). A sufficient amount of blood taken from the fingertip using strips was taken to the lactate measurement sensor and measured in mmol/L with a Lactate Scout brand lactate analyzer.

Rating of perceived exertion

The rating of perceived exertion (RPE) is a psycho-physical measure of effort and is traditionally obtained on a 6-20 or 10 scale (5). RPE uses a modified Borg scale of 10 after the first training day (1st training), after the last training of week 4 (12th training) and at the end of 8 weeks of training (24th training). The question "What is the fatigue you perceive during training?" was asked to calculate the training load of each athlete, right after the end of the training. The values were recorded as a result of the answers given by the participants.

Table 3. Received Perceived Exertion (18,26).

0	Rest
1	Really Easy
2	Easy
3	Mooderate
4	Sort of Hard
5	Hard
6	
7	Really Hard
8	
9	Really, Really, Hard
10	Maximal

Respiratory Parameters

Measurements were made before the studies and at the end of the 8-week study period. Cosmed Ponny Fx model device was used during the measurements. During the measurement, the participants were asked to wear comfortable clothes and sports clothes. It was stated to the participants that maximal effort was mandatory. Different measuring nozzles were used for all participants. In addition, the use of mouthpieces was ensured so that there was no gap at the corners of the mouth of the participants. During the measurement, the participants were verbally motivated.

FVC measurement

For the pulmonary function tests, the soccer players were asked to breathe normally three times, then the test was performed with a deep and rapid expiration maneuver after a deep maximal inspiration. Upon completion of the test, FVC, FEV1, PEF and FEV1/FVC (%) values were obtained. Pulmonary function test was repeated 2 times and the best value was recorded.

MVV measurement

It is the maximum amount of volume that can be inhaled as a result of voluntary effort in one minute. In the measurement, the participants were asked to breathe quickly for 12 seconds. The pulmonary function test was repeated 2 times and the best value was recorded in liters.

Statistics

The data obtained as a result of the studies were evaluated in the package program called SPSS (IBM SPSS Statistics 25). The mean and standard deviations of the data for all variables were calculated. According to the results of the normality test (Shapiro Wilk, Histogram, Skewness and Kurtoris), it was seen that the data fulfilled the parametric assumptions. The ''Repeated Measures Anova'' test was applied to determine the difference within the group for Yo-Yo, lactate and rating of perceived exertion, which were taken at three different times as pre-test, mid-test and post-test. ''One Way ANOVA'' was used to determine the difference between the groups for each period (pre-test, mid-test and post-test). "Duncan" test, one of the Post-hoc tests, was used to determine which group caused the difference. In addition, with the pairwise comparisons of Yo-Yo, lactate, RPE parameters between the pretest and the 4th and 8th weeks. In the pre-test and post-test comparisons of parameters

FVC, FEV, FEV1/ FVC, PEF, MVV were used ''Paired-Samples T Test''. In the evaluation of statistical analyzes, cases with P<0.05 were accepted as significant values.

RESULTS

Table 4. Comparison of Yo-Yo IR level 1 test data.

Variables	Pre Test (ml/kg/min)	Mid Test (ml/kg/min)	Post Test (ml/kg/min)	n_p^2	p
CG (n=8)	49,88± 5,13**y**	52,28± 4,91**x**	51,60± 5,45**x**	**0,68**	**0,00***
TSSG (n=8)	49,95± 4,82**y**	52,40± 5,36**x**	52,49± 6,06**x**	**0,45**	**0,02***
SSG (n=8)	50,32± 6,46	51,21± 6,86	51,14± 7,42	**0,11**	**0,39**
HITT (n=8)	50,39± 3,99**y**	52,36± 3,22**x**	52,89± 3,38**x**	**0,48**	**0,01***
LICT (n=8)	49,90± 2,17**y**	50,79± 1,36**xy**	51,84± 2,33**x**	**0,49**	**0,01***
f	**0,02**	**0,20**	**0,14**		
p	**0,99**	**0,93**	**0,97**		

x,y,z: Different letters on the same line are significant for the difference between the within-group means (p<0.05).

When the pre-test results of the Yo-yo AT-1 test were examined in the study, no significant difference was found between the groups (p>0.05). These results were used before the study as an indicator for the homogeneous distribution of the groups. When the inter-group and post-test results of the Yo-yo AT-1 test data were evaluated, no significant difference was found between the groups (p>0.05).

Table 5. Comparison of blood lactate test data.

Variables	Pre Test (ml/kg/min)	Mid Test (ml/kg/min)	Post Test (ml/kg/min)	n_p^2	p
CG (n=8)	3,73± 0,41**b**	3,88± 0,38b	3,93± 0,37**d**	**0,20**	**0,22**
TSSG (n=8)	11,33± 2,59**a**	9,29± 2,04**a**	8,74± 1,00**b**	**0,32**	**0,07**
SSG (n=8)	10,61± 5,90**a**	8,26± 3,48**a**	6,51± 3,05**c**	**0,30**	**0,11**
HITT (n=8)	13,26± 4,79**a**	14,23± 3,80**a**	10,75± 2,39**a**	**0,32**	**0,06**
LICT (n=8)	5,46± 2,89**bx**	4,56± 2,28**x**	2,34± 0,44**dy**	**0,56**	**0,03***
f	**9,10**	**19,28**	**28,70**		
p	**0,00***	**0,00***	**0,00***		

a,b,c: The difference between the means between groups with different letters in the same column is significant (p<0.05).
x,y,z: Intra-group means with different letters on the same line, the difference is significant (p<0.05).

According to Table 5, it was determined that the lactate levels of the groups were significantly different after the pre-intermediate and post-tests (p<0.05). Accordingly, lactate levels of CG and LICT groups were similar after the pre-test (p>0.05), but significantly lower than the other groups (p<0.05). The lactate levels of TSSG, SSG and HIIT groups after the pre-test were not different from each other (p>0.05). When the lactate levels were compared between the groups after the interim test, the intermediate test results of all groups showed a decrease compared to the pretest data. A significant difference was determined between TSSG and CG groups, between HIIT and CG groups, and also between HIIT and USC groups (p<0.05).

Table 6. Comparison of rating of perceived exertion data.

Variables	Pre Test (ml/kg/min)	Mid Test (ml/kg/min)	Post Test (ml/kg/min)	n_p^2	p
CG (n=8)	2,13± 0,35**b**	2,25± 0,46**b**	2,25± 0,46**b**	**0,03**	**0,80**
TSSG (n=8)	3,13± 0,35**b**	3,38± 1,06**b**	2,75± 0,46**b**	**0,24**	**0,15**
SSG (n=8)	2,13± 0,84**b**	2,13± 0,83**b**	1,88± 0,64**b**	**0,10**	**0,48**
HITT (n=8)	6,00± 0,93**a**	6,38± 1,60**a**	5,63± 1,92**a**	**0,07**	**0,61**
LICT (n=8)	2,50± 0,76**b**	2,75± 1,58**b**	2,00± 1,31**b**	**0,21**	**0,20**
f	**9,10**	**19,28**	**28,70**		
p	**0,00***	**0,00***	**0,00***		

a,b,c: The difference between the means between groups with different letters in the same column is significant (p<0.05).

When the rating of perceived exertion (RPE) test data in the pre-test measurement of the groups were evaluated, there was a significant difference between the groups (p<0.05). A significant difference was found between TSSG and CG groups in the pre-test data of RPE measurements (p<0.005). As a result of the pre-test, the highest perceived difficulty level occurred in the HIIT group (P<0.05). According to this; A significant difference was found between HIIT and CG, HIIT and TSSG, HIIT and SSG, and HIIT and LICT groups (p<0.005). When the intermediate test data, in which perceived difficulty level measurements were made, were analyzed on the basis of groups, a significant difference was found between the groups (p<0.05).

Table 7. Comparison of FVC, FEV1, FEV1/ FVC %, PEF, MVV parameters of the groups participating in the study.

Variables	CG n=8	TSSG n=8	SSG n=8	HIIT n=8	LICT n=8	f	p
	Mean+SD	Mean+SD	Mean+SD	Mean+SD	Mean+SD		
FVC/ Pre Test	3,01±**0,60**	3,82±**0,76**	3,61±**0,67**	3,34±**0,80**	3,25±**0,30**	**1,89**	**0,14**
FVC/ Post Test	3,58±**0,43**	3,83±**0,64**	3,71±**0,52**	3,68±**0,75**	3,67±**0,28**	**0,21**	**0,93**
FEV1/ Pre Test	2,80±**0,63**	3,51±**0,62**	3,43±**0,57**	2,97±**0,80**	3,10±**0,29**	**2,03**	**0,11**
FEV1/ Post Test	3,41±**0,42**	3,66±**0,59**	3,61±**0,52**	3,25±**0,72**	3,45±**0,26**	**0,79**	**0,54**
FEV1/ FVC % Pre Test	92,13± **3,60ab**	92,13± **5,28ab**	95,25± **5,75a**	88,25± **4,23**	95,63± **1,06a**	**3,82**	**0,01***
FEV1/ FVC % Post Test	95,25± **4,06a**	95,50± **3,21a**	96,75± **2,60a**	87,88± **6,88**	93,75± **1,49a**	**5,88**	**0,00***
PEF/ Pre Test	6,97±**1,36**	6,47±**1,12**	6,90±**1,44**	7,31±**0,57**	8,14±**1,32**	**2,15**	**0,09**
PEF/ PostTest	6,89±**1,89**	7,04±**1,33**	7,13±**1,89**	6,09±**1,80**	7,96±**1,86**	**1,14**	**0,36**
MVV/ Pre Test	139,55± **23,76**	151,90± **15,64**	140,90± **29,08**	149,85± **26,95**	132,16± **17,21**	**0,97**	**0,44**
MVV/ Post Test	155,86± **20,11**	142,28± **23,54**	149,15± **32,04**	143,05± **13,71**	135,78± **16,33**	**0,95**	**0,45**

a,b,c: The difference between the means between groups with different letters on the same line is significant (p<0.05).
* : Indicates that there is a significant difference between and/or within the groups (P<0.05).

Only significant difference was found between the groups FEV1/FVC Pre test and FEV1/FVC Post test (p>0.05).

DISCUSSION

In this study, it was aimed to examine the effects of different training methods applied to young soccer players on aerobic and anaerobic performance and some respiratory parameters.

When we observe soccer training, it is possible to evaluate both internal and external loads with several methods. Internal load; It creates physiological responses that occur with training stimuli (26) and is typically possible by examining and evaluating oxygen consumption (7), blood lactate concentration (6) or rating of perceived exertion (26). In this direction, as a result of the statistical evaluations made in the light of the data obtained in the study; When the pre-test results of the Yo-yo AT-1 test data of the groups were examined, no significant difference was detected (p>0.05). These results show us that the groups were formed homogeneously. There is a common view that there is an increase in VO2max values with high-intensity aerobic training (16, 20, 24). While Mcmillan et al (30) revealed that the increase in VO2max value in each training unit was 0.56% with high-intensity training, Helgerud et al (23) found this rate to be 0.67% in their study. In another study; It has been observed that both continuous running training and high-intensity interval training applied 3-4 days a week and for 6 weeks lead to a similar increase in VO2max values (4). In this study, there was a significant increase in VO2max values in both the LICT group and the HIIT group, in line with the literature (p<0.05). In the study of Salah et al (36), in which they compared high-intensity training and continuous training protocols, they did not find a significant difference in VO2max values, unlike our study. In addition to these, there are some other studies showing that interval training increases aerobic performance more than continuous running training (11,35). Contrary to this finding, when the difference between the groups in the study was examined, it was seen that the difference was insignificant (p>0.05).

Some researchers have found that the average blood lactate concentrations are between 2 and 10 mmol during a soccer match (2, 28,43). In a review in which many variables of small sided games were

examined, it was observed that the lactate concentrations stated in this study showed parallelism with the lactate concentrations (6-12 mmol/L) obtained during the 4x4 SSG applied in a study (29). In the study carried out, it was determined that the lactate concentrations in the 4x4 SSG and TSSG games were in the range of 6.51-11.33 mmol/L and were similar to the literature. In their study, Selmi et al (39) revealed that LICT and SSG are studies with similar intensity (86% of maxHR) and stated that both types of training increase aerobic capacity. In a recent study, no significant difference was found in lactate concentrations between the groups after LICT and SSG (39) which is the same with our study.

In addition to blood lactate accumulations in soccer, data obtained from indicators such as rating of perceived exertion have also shown that high intensity can be achieved using the ball (25,34). Contrary to this information, in the study carried out, RPE levels of the HIIT group were found to be significantly higher in all three measures (pre-test, mid-test and post-test) compared to the SSG and TSSG groups applied with the ball. This finding; It can be explained as the increasing training load and the increasing contribution in the anaerobic system, leading to an increasing rating of perceived exertion (26). Similarly, Drust et al (14) reported an increase in RPE, although there was no change in heart rate and VO2 values of intermittent exercises compared to exercises performed in stable-state, in both groups. In addition, it is seen that the RPE values of soccer players after SSG applied in 4x4 format are approximately between 5-8.9 (12, 21, 27). Contrary to these findings, RPE values of the 4x4 SSG and TSSG groups in our study were lower than these values is considered as a result of the fact that the players can rest more easily in the parts where the game is not actively played during SSG and can reduce the intensity of the game by playing the ball more slowly.

In this study, in which different training methods were applied, one of the observed situations of soccer players is the changes in the respiratory system. Patlar (32) in his study, in which he examined the effect of long-term running and game format on the respiratory system, found significant increases in the vital capacities of soccer players who practiced LICT compared to the game form group. While the FVC data was 3.25 ± 0.30 in the pre-test results for the LICT group, it was 3.67± 0.28 in the post-test results, and these findings of the FVC data showed that 8-week LICT led to an increase. Similarly, in the continuous running method applied 3 days a week for 8 weeks, the FVC data of the participants was 4.10± 0.26 in the pre-test results, while it was 5.14± 0.29 in the post-test results and a significant increase was observed (44). This increase in FVC data as a result of training has been observed in some studies in the literature (15, 19, 22, 32). Contrary to these findings, in a study, it was revealed that there was no significant difference between the pre-test and post-test data in the FVC values of the soccer players with the different training methods applied for 8 weeks to the soccer players whose age groups were similar to our study (45). In the study, an increase was observed in the post-test data compared to the pre-test data in the FEV1 data of all groups. Similarly, Hazar and Ibis (2010) found an increase in FEV1 data in their study on amateur football players. On the contrary, Zerin et al (45) found that FEV1 data did not lead to an increase as a result of the applied training in their study. In both pre and post-test measurements of FEV1/ FVC parameters of all groups; A significant difference was found between the groups, unlike the other parameters in which the respiratory test was performed. Soykan et al (40) no significant change was found in the PEF values of soccer players s a result of LICT performed for 4 weeks. However, in our study, interestingly, according to the pre- and post-test data of all groups, it was determined that the PEF levels of the HIIT group decreased significantly. It is thought that this decrease may be due to expiratory flow limitation that may occur during submaximal or maximal exercises (8, 33). There was no statistically significant difference between the groups in the pre-test and post-test results of the MVV data, and in all groups as a result of pairwise comparisons ($p>0.05$). Similarly, Erkmen et al (15) and Soykan et al (40) did not find a significant difference in MVV data after training applied to both professional and amateur soccer players. However, Zerin et al (45) reported that MVV data showed a significant increase as a result of the training applied to amateur soccer players for eight weeks.

As a result; 8-week different trainings applied to the soccer players showed the same effect in all groups except the SSG group and increased the VO2max levels significantly. While different training methods applied to the groups we observed that significantly decreased the lactate levels of only the LICT group. RPE levels reduced with training. Significant increases in the FVC and FEV1 levels of the LICT and HIIT groups, it caused a significant

decrease in the FEV1/FVC levels of the LICT group and in the PEF levels of the HIIT group.

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Comparison of Outdoor and Indoor Playground Qualifications of State and Private Kindergartens: Case of Malatya Province

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Abstract

In this study, it is aimed to contribute to the determination of the most appropriate spatial dimensions by comparing the dimensions of the indoor and outdoor playgrounds in private kindergartens and public kindergartens in Malatya. In this study, document analysis method was used. When the research findings are examined, it is seen that although there are not specifically multi-purpose halls in public schools other than classrooms, the playgrounds of public kindergartens have large areas where students can engage in activities comfortably compared to private institutions. Again, it has been found that public kindergartens have larger areas in indoor playgrounds compared to private kindergartens regarding quotas, in terms of quota based area measurements. In future research, applying motor skill tests to children studying in public kindergartens and private kindergartens, which have two different service standards, will provide detailed and targeted answers about field competencies from the results achieved.

Keywords: Outdoor Playground, İndoor Playground, Preschool Education, Motor Development, Physical Activity.

Devlet Okullarında ve Özel Okullarda Öğrenim Gören Spor Yapan ve Yapmayan Orta Öğretim Öğrencilerinin Saldırganlık Düzeylerinin İncelenmesi

Özet

Bu çalışmada Malatya ilindeki özel anaokulları ve devlet anaokullarında bulunan açık ve kapalı oyun alanlarının ölçülerini karşılaştırarak en uygun mekânsal ölçülerin belirlenmesine katkı sağlamak amaçlanmıştır. Bu çalışmada doküman analizi yöntemi kullanılmıştır. Araştırma bulguları incelendiğinde devlet okullarında derslik harici spesifik olarak çok amaçlı salonlar bulunmamakla birlikte, devlet anaokullarının sahip olduğu oyun bahçeleri, özel kurumlara göre öğrencinin rahat aktivitede bulunabileceği geniş alan ölçülerine sahip olduğu görülmektedir. Yine devlet anaokullarının, özel anaokulları göre kapalı oyun alanlarında, alan ölçüleri ile ilgili olarak özel okullar kadar kurallar dahilindeki ölçülerden kontenjana göre daha geniş ölçülerde alanlara sahip olduğu bulgusuna ulaşılmıştır. Gelecekteki araştırmalarda, iki farklı hizmet standardına sahip olan devlet anaokulları ve özel anaokullarında öğrenim gören çocuklara motor beceri testleri uygulanması, ulaşılan sonuçlardan alan yeterlilikleri ile ilgili ayrıntılı ve hedefe yönelik cevaplar alınabilmesini sağlayacaktır.

Anahtar kelimeler: Açık Oyun Alanı, Kapalı Oyun Alanı, Okul Öncesi Eğitim, Motor Gelişim, Fiziksel Aktivite.

INTRODUCTION

The quality of education in the development of human beings depends on the design and presentation of the environments and places that will enable this fiction to be implemented correctly effectively, as well as the education system that is designed. According to the definition of pre-school education, which constitutes the first stage of the education life of individuals, in the Ministry of National Education regulations, the aims of the kindergarten are seen to ensure the physical, psychomotor, mental, language, social and emotional development of children and to give them good habits (1). Many studies in the literature support the view that the quality of pre-school education affects children positively (2,3,4). The quality of pre-school education is closely related to the educational environment as well as the curriculum and the teacher (5). The fact that researchers state that a child who attends kindergarten for eight hours will be involved in approximately one hour of physical activity and is less likely to engage in one hour of physical activity outside of the preschool setting, emphasizes the importance of preschool education and spatial characteristics (6).According to NASPE's statements, preschoolers should engage in at least 60 minutes of structured physical activity (for example, throwing, kicking, catching, and playing to music) and at least 60 minutes of unstructured physical activity (for example, with wheeled vehicles and playground equipment) daily (7). Various studies of lack of physical activity have investigated the behavior of preschoolers in various environmental contexts. In terms of physical activity levels, free game appears to be less efficient than structured activities in achieving high physical participation during the game (8). Too large independent space can cause teachers' blind area to be out of care, on the other hand, the independent area is too small to perform suitable activities for very crowded group of children. Children's social play area (playground) should be clustered for children to gather (9). In addition, the playground in these places should be designed in accordance with the static and dynamic anthropometric measurements of children. Class size / number of childeren ratio, teacher training, playground size, use of electronic media, and trips to external institutions have emerged as important determinants of locomotor score and total motor score (10). Again, recent studies have emphasized the vital importance of motor skills for children's physical activity levels. It has been shown that physically active children have higher motor skills, while less active children have lower motor skills. Moreover, children with better motor skills spend more time in moderate to vigorous physical activity (11). Therefore, motor competence and physical activity can be considered as interconnected concepts in child development. Preschoolers should be provided with a tool to build the foundation for basic motor skills that can be developed in early and middle childhood. Regarding the motor skills of preschool children with coordination disorders and developmental delays, it has been concluded that children with this particular developmental regression are less active than children with better-developed motor skills (12, 13). However, in another study, recent evidence linking the low motor skills of typically developing preschoolers to low levels of physical activity highlights the importance of monitoring typically developing children, particularly in the preschool setting where activities aim at improving motor skills. In addition, considering that the preschool years are an extremely critical time for the development of healthy lifestyle behaviors, it is necessary to examine which environmental features encourage motor skills in the preschool setting (14, 15). Playground design affects children's physical skills and motor coordination (16).

Area Measurements of Indoor and Outdoor Playgrounds of Kındergartens in Turkey

There are area rules in the current regulations for outdoor and indoor playgrounds in Turkey.According to the regulations of private education institutions in Turkey, the quota of the children for the school garden is determined by calculating 1.5 m² of space for each individual in the open area reserved for use as a garden, provided that the playground is not less than 25 m².The usage area allocated for a student in kindergarten classrooms and kindergarten classrooms of schools should not be less than 1.5 m² (17). In state education and training institutions, at least 1.5 m² area is required for each student in kindergarten playground area. Playground should be on the ground floor in closed areas, preferably in a position that can be opened to the garden. Area per person in indoor playgrounds should be minimum 2.40 m² (18).

Open and Indoor Playground Sizes in Kindergartens in Different Countries

The Norwegian Ministry of Education and Research has defined a guiding principle for the space that should at least be available to children. It

is 4 m² per child for the ones over three years old and 5.3 m² for children under 3 years old. The size of the exterior area should be six times the interior area (24 m² for over three-year-olds, 31.8 m² for under three-year-olds) (19). In Poland, the indoor area requirement for daycare centers and kindergartens for up to 5 children is set at 16 m². The minimum indoor space requirement for each additional child is 2.5m² per child. However, there is no clear data about the outdoor playground measurements in Poland. According to OECD international data, kindergartens have higher and more detailed standards for public buildings between 2.5 and 3 m² (20).In the United States,if an indoor facility has less than seventy-five square feet of accessible outdoor space per child or otherwise provides indoor active play area, a large indoor function room meeting the seventy-five square feet requirement per child may be used if it meets the following requirements: The facility or home should be equipped with an outdoor playground that is directly adjacent to indoor facilities or free from hazards and can be reached by a route no more than one-eighth mile from it. The outdoor playground should be at least seventy-five square feet for each child using the playground at any time. The following exceptions should apply to space requirements: A minimum of thirty-three square feet of accessible outdoor play area is required for each baby; At least fifty m²of accessible outdoor play area is required for every child between eighteen and twenty-four months old. For children 6 to 23 months, 2 to 5 years old, 5 to 12 years old, there should be separate playgrounds; A roof used as a playground should be surrounded by a four to six feet high fence in accordance with local regulations, with the bottom edge less than three and a half inches from the floor. The fence should be designed to prevent children from climbing (21). In Canada, the room for preschool children must have a barrier-free floor of at least 2.8m²for each child in the 0-3 age group. The kindergarten play area must have at least 2.58 m² (approximately 28 square feet) of unobstructed floor space for each child. In outdoor playground conditions, in childcare centers that operate 6 hours or more per day, the outdoor playground must be at least 5.6 m²(60 square feet) for each child (22). Similarly, for the kindergarten age group, outdoor playground measurements in the range of 5 to 10 m²are required for Canada according to OECD playground data qualifications. Each fenced outdoor playground must be limited to 64 children. If the playground is used by infants, toddlers, preschoolers, or family age groups, the fence must have a minimum height of 1.2 m (4 feet) (20). In Ireland, in nurseries, day care centers and kindergartens, for children under the age of two, space with an area of minimum of 3.7m²per child; for children under the age of two to three, space with an area of minimum 2.8m²per child; for children aged three and over, space with an area of minimum 2.3 m²per child must be provided. There are no specific measurements stipulated for open areas. (23). In South Africa indoor and outdoor playgrounds for nurseries, daycare centers and kindergartens must be clean and safe for young children. Every child should have enough space to move freely, which means there should be 1.5 m²indoor playground per child and 2m² outdoor playground per child (24). In Australia, daycare centers and kindergartens must ensure that education and care facilities have at least 3.25 m² barrier-free indoor space and at least 7m² barrier-free outdoor space for every child. In Switzerland, it is stated that the indoor education classrooms should be between 70-90m², and no specific measurement rule is given regarding the external environment (25). In New Zealand, it is at least 2.5 m² per person indoors, while it is 5 m²outdoors (26). When we look at the international standards, the OECD average of area measurement for indoor playground is 2.9 m² per child for kindergarten and 3.6 m²for daycare centers. The OECD average of area measurement for open space requirement per child is 7 m²for kindergarten and 8.9m² for childcare. The competence of these indoor and outdoor playgrounds in preschool children is important for the child's physiological, psychological and motoric skills. It is of great importance for the continuation of development that the infrastructure of these skills is taken into account and grounded throughout the pre-school education period. The grounding stage of a good skill education can be achieved by examining it with extensive and detailed research and comparisons. There are no studies in the literature that examine the competencies of outdoor and indoor playgrounds in the education of preschool children in detail and compare them with playgrounds in other countries. In this study, it is desired to present a document analysis study in order to reach the appropriate spatial conditions by examining various data and offering the best education to the children by comparing the indoor and outdoor playground measurements of the kindergartens and nurseries where the children who receive preschool education throughout the province of Malatya.

MATERIAL AND METHOD

This study has used a document analysis method, which is considered suitable for our purpose.

Analysis of Data

Document analysis is a type of qualitative research that uses a systematic procedure to analyze evidence based on documents and answer specific research questions. Like other methods of analysis in qualitative research, reviewing, examining, and interpreting data is necessary for document analysis to gain meaning and empirical knowledge of the structure under study (27).

Relieving Ethical Concerns

In order to examine the data in detail and to carry out this research within the framework of scientific ethical rules, permission was obtained from the Malatya Directorate of National Education (numbered E-34259660 and dated 20.04.2021 written permission) (Annex-1).

RESULTS

Table 1. Comparison of area measurements of kindergartens in private and public ınstitutions

Private Kindergarten			Public Kindergarten		
Outdoor Aream²	**Indoor Aream²**	**Total Building Aream²**	**Outdoor Area m²**	**Indoor Area m²**	**Total Building Aream²**
336	20	1200	133	47	570
1061	16,32	1172	1125	48	800
253,89	25	155	523	47,5	773,97
1000	25,20	450	3274	46,8	978,24
94	16	331	2442	46,5	935
350	26	583	3473	45,9	1220
434.17	15,11	451			
500	15,40	460			
450	18,76	959,1			
256	27,50	227,1			
-	20	2835			
192	21,12	220			
640	30,35	562			
382,56	29,95	777,5			
880	28,10	882,9			
280	16,81	331,54			
1074	17,65	300			
1068	17,85	300			
287	17,11	809			
148	34,20	1306			
782	22	1365			
194	20	118			
2766	63,91	650			
426	19,85	683			
300	28	567,5			
510	20.60	263,9			
322	17.40	650			

In Table 1, it is seen that the open playgrounds of public kindergartens have a larger area than private education institutions. Again, in Table 1, public kindergartens used larger measures in the construction of playgrounds compared to private kindergartens in the area measurements determined according to the students quota. In addition, only 1 (one) school does not have an open playground.

Table 2. Comparison of average area measuremen tof kindergartens in private and public institutions

Average Area Measurement of Private Kindergarten			Average Area Measurement of State Kindergarten		
Outdoor Area m²	**Indoor Area m²**	**Total Building Area m²**	**Outdoor Area m²**	**Indoor Area m²**	**Total Building Area m²**
343	23	616	1496	46	879

As shown in Table 2, the average area of buildings in private kindergartens is 616m², average classroom area is 23,23m², average outdoor playgroundis 343,62m². In private kindergartens, the student quota of one internal education class varies according to the m²of that area. Again, in Table 2, the average area of buildings in public kindergartens is 879m², average classroom area is46.8m², average outdoor playground is 1496 m²(6 schools). In public kindergartens, the student quota of one internal education class is 20.

Table 3. Comparison of numbers and average of playgrounds in kindergartens in private and public ınstitutions

Number and Average of Private Kindergarten Play Areas	Number and Average of Public Kindergarten Play Areas
Number and Average of Multi-Purpose Playgrounds (within 27 Schools)	**Number and Average of Multi-Purpose Playgrounds (within 6 Schools)**
11 (minimum 17 m², maximum 658 m²)	1 (48 m²)

In Table 3, some of the private institutions have more than one specifically multi-purpose halls in the building. In 11 of 27 private schools, there are multi-purpose halls or game hallsof whicharea measurements areminimum 17 m2 and maximum 658m². Only 1 of the 6 public schools has a multi-purpose hall or game room as large as the area of the internal education classroom.

DISCUSSION

According to the data obtained from the document analysis, it has been seen that the open playgrounds of public kindergarten institutions have a larger area than private kindergarten institutions. While at least 10 (ten) of 27 (twenty-seven) private education institutions have a multi-purpose hall and an extra gymnasium outside the classroom, 1 (one) has been observed in public kindergartens. While student quota of public kindergarten institutions are fixed at 20 (twenty), those of private education institutions vary according to the architectural plan. When state institutions are compared to private education institutions in terms of minimum student quota, the area per student in state institutions is larger than in private institutions. When we look at the OECD international data, the United States,10-12 m²for indoor area, and Norway, 30-35 m²for open area, are the countries of minimum area per person (20). These two countries have area measurements that are considerably higher than the OECD minimum area measurements per capita. One of the important points of thisdata is that Turkey's area measurements are inversely proportionalto OECD international required area measurements. While the square meter per capita gets smaller as the area grows in Turkey, per capita measurements increase as the area grows in OECD international scales.

This means that the physical activity and motor development levels of children educated in kindergartens or nurseries in these countries will be noticeably higher than the ones in other countries. Because larger open playgrounds and wide open environments with natural elements encourage physically active play. Recent studies have shown positive associations between larger playgrounds and higher physical activity (28,29, 30,31). Studies conducted in this area have also shown results that support this prediction. The positive findings of this pilot study can be explained by the fact that children run and chase more games with fewer children per playground. This supports the findings of Dowda et al. (30) that a small number of children in large playgrounds is associated with increased physical activity. (30). Children in childcare centers with at least 60 minutes of outdoor or active time were more active within 24 hours than those without these opportunities. Outdoor time and total active time spent in childcare were also associated with moderate to vigorous physical activity time during the 24-hour-day. Physical activity and high motor skill performance are also frequently encountered in related studies (32, 28, 11). When we consider the studies involving the relationship between motor skill performance and playgrounds, it has been shown that outdoor games produce developmental results that cannot be achieved indoors. Not only has research shown that playing outdoors in general is beneficial for children's physical development, recent research has revealed that children who use forests or natural areas as playgrounds perform better on motor skill tests than children who play in traditional playgrounds (33). Numerous studies have shown that outdoor play from birth to age 5 produces developmental outcomes that cannot be achieved indoors. However, Butcher and Eaton (32) found that preschoolers who spend more time in active gross motor activities during indoor free play in a daycare setting have better functioning ability, but worse balance and visual motor control, than children who spent their time in fine motor activities. There is a low but positive correlation between the motor skill proficiency of the 5-year-old group and the inner playground.

Although public schools do not have multi-purpose halls outside of classrooms, the playgrounds of public kindergartens have large areas where students can do activities comfortably when compared to private institutions. Again, public kindergartens have larger areas in indoor playgrounds compared to private schools, in terms of student quota, which is within the rules on the basis of area measurements. When the position of Turkey in the international platform regarding playgrounds is examined, it is thought that the inverse proportion between the area measures in Turkey and OECD international data is an important finding. It is thought that investigating the reason for this and revealing the correct information will be an important progress in order to increase motor skills and physical activity in pre-school education. This study is the first study in which a detailed regional analysis of playground standards has been made. In order to reveal the motor skill and physical activity differences between countries, a study that includes play areas of countries and performances of students can be included in the literature. In addition, in future research, applying motor skill tests to children studying in public kindergartens and private kindergartens, which have two different service standards, will provide detailed and targeted answers about field competencies from the results achieved.

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Investigation of Aggression Levels of Secondary School Students Studying in Public and Private Schools, Playing and Non-Sports

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Abstract

This study was conducted to determine the aggression levels of secondary school students studying in public and private schools with various sub-dimensions. While the secondary education institutions in Konya constitute the universe of the research, the sample group consisted of a total of 1200 students, 600 male and 600 female, studying in 6 private and 9 state secondary education institutions located in the central districts of Konya. The schools where we conduct our study are secondary education institutions with the status of science high school, anatolian high school, sports high school and vocational high school. Personal information form was used for the socio-demographic information of the students, and the aggression inventory consisting of 30 items and the reliability of which was developed by İpek İlter KiPER was used to determine the aggression levels.
For our study, Cronbach's Alpha value was determined as 0.87 for all of the items in the aggression inventory, while the Cronbach's Alpha value was determined as 0.81 for the Destructive aggression sub-dimension, 0.80 for the Assertiveness sub-dimension, and 0.79 for the Passive Aggression sub-dimension. In the examinations made, statistically significant differences were observed between the groups according to school types, gender, grade level and age. As a result; It has been observed that students studying in private schools are more aggressive than students studying in public schools. In general, it was concluded that while assertiveness and destructive aggression were high in the groups, passive aggression was low. In summary, it can be said that sports increase assertiveness and destructive aggression and decrease passive aggression.

Keywords: State Schools, Private Schools, Aggression, Sports

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Özet

Bu araştırma, devlet ve özel okullarda öğrenim gören ortaokul öğrencilerinin saldırganlık düzeylerini çeşitli alt boyutlarıyla belirlemek amacıyla yapılmıştır. Araştırmanın evrenini Konya ilindeki ortaöğretim kurumları oluştururken, örneklem grubunu Konya ili merkez ilçelerinde bulunan 6 özel ve 9 devlet ortaöğretim kurumunda öğrenim gören 600 erkek ve 600 kız olmak üzere toplam 1200 öğrenci oluşturmuştur. Çalışmamızı yürüttüğümüz okullar fen lisesi, anadolu lisesi, spor lisesi ve meslek lisesi statüsündeki ortaöğretim kurumlarıdır. Öğrencilerin sosyo-demografik bilgileri için kişisel bilgi formu, saldırganlık düzeylerini belirlemek için İpek İlter KİPER tarafından güvenirliği geliştirilmiş 30 maddeden oluşan saldırganlık envanteri kullanılmıştır. Araştırmamız için saldırganlık envanterindeki tüm maddeler için Cronbach's Alpha değeri 0.87, Cronbach's Alpha değeri ise Yıkıcı saldırganlık alt boyutu için 0.81, Atılganlık alt boyutu için 0.80 ve Girişkenlik alt boyutu için 0.79 olarak

belirlenmiştir. Pasif saldırganlık altboyutu. Yapılan incelemelerde okul türü, cinsiyet, sınıf düzeyi ve yaşa göre gruplar arasında istatistiksel olarak anlamlı farklılıklar gözlenmiştir.
Sonuç olarak; Özel okullarda okuyan öğrencilerin devlet okullarında okuyan öğrencilere göre daha saldırgan oldukları gözlemlenmiştir. Genel olarak gruplarda atılganlık ve yıkıcı saldırganlığın yüksek olduğu, pasif saldırganlığın ise düşük olduğu sonucuna varılmıştır. Özetle sporun atılganlığı ve yıkıcı saldırganlığı artırdığı, pasif saldırganlığı azalttığı söylenebilir.

Anahtar Kelimeler: Devlet okulları, Özel okullar, Saldırganlık, Spor

INTRODUCTION

Physical education and sports activities have an important place in the physical development of the child and have positive contributions in terms of social and emotional development. Physical education and sport activities bring out skills such as creativity and leadership. The struggle also develops personality traits such as hard work, harmony, productivity, decisive, tolerant, respectful, obeying rule, acting together, acting independently, disciplining oneself, being diligent (1).

Activities that are carried out as a profession within the context of leisure time activities, either individually or collectively, with or without a vehicle, under certain rules that improve the ability of the individual to achieve his or her natural environment as a social environment are called sports. The cultural phenomenon that socializes, integrates with society and develops spirits and physical condition which is competitive and solidarist is also called sports (2,4). Physical education and sport's effects an development of a person are passible studied under four headings; physical development, psycho-motor development, mental development, emotional and social development (5,9).

When people's past daily experience is examined, we encounter the concept of aggression in the acts of killing, violence and wounding. The origin of the word aggressiveness (aggression) is Latin. The concept of aggressiveness which means moveing in one direction or fronting has also meanings of taking a stance and reacting (10).

The aggression itself can be defined as behaviors that hurt or bother animate or inanimate beings except himself / herself (11). Aggresiveness can be regarded as a persons tendency to injure or harm to another person (12). Aggression is the action which an individual harms to the enviroment he has lived deliberately and consciously or tendencies includes physical and emotinonal goals to get under control his social environment, to suppress as dominating in his anvironment (13). The behavior of aggressive may arise in the way of not accepting different thoughts, criticizing others in society, taking digs at sameone immediately indicating that they do not have a different idea, feeling of revenge, accusation, enjoying news reading or watching violent news from sources (14).

In the studies of aggressive behavior, researchers have explored aggression as active or passive aggression, physical or verbal aggression, direct or indirect aggression (15). There are theories about the causes of aggression begins with the existence of mankind and how it happens. These theories are instinct theory, biological theory, the theory of inhibition aggression and hint-stimulation theories.

In sport the acts of aggression appear as injuring his oppnent deliberately or actions done for injuring. Hawing diffıculty in getting the intended achievement or delay of success triggers aggressive behavior. Injuries are perceived as provocation or blocked according to the athlete. The provocation increases aggression, and the drive arouses actions as harassing provocation arises by the actions such as, disturbing, mocking and insulting an athlete (16).

MATERIAL AND METHOD

Objective: In this study, it is aimed to determine the aggression behaviors of secondary school students who attend public schools and private schools.

Models of Research: In our secondary school students who did and did not perform sports, we used a screening method to measure aggression levels with their general dimensions and sub dimensions. Through the screening method, it is aimed to determine the situations that have been seen in the past and still exist. The elements of the research were taken as they are. Things wanted to be known or to be determined have been observed (17).

Collection of Data: To determine aggression levels in our study groups, the aggression inventory,

consisting of 30 items, which was developed by İpek İlter KİPER (1984) was used. Question and answer forms of the aggressiveness inventory used consists of two main parts. In the first part demographic characteristics belonging to the participants are determined while the second part is the inventory of aggressiveness.

Universe And Sampling: The universe of our research are enrolled in private and public secondary schools (1,200 students; 600 in state and 600 in private school) in the Selçuklu district of the Ministry of National Education in Konya province.

Inventory Of Aggressiveness: In this section, there are 30 questions totaly for general aggression, 10 questions for destructive aggressiveness, 10 questions for imperishableness, and 10 questions for passive aggression. Which are subbranches of aggressiveness.

According to the inventory, the seven-digit likert type scale is formed in the answers. The answer for "they do not obey me at all" is -3 and the answer for "very good", the value of the answer is +3. The subject who answers all questions as "don't apply to me" gets -30 (-3*10=-30) points for each aggression subscale and for the answers "it applies to me completely gets +30 (3*10=30) points for each aggression subscale. Statistically, zero-number can cause problems. We have not used these points as they are statistically impossible to use as natural. That's why we added 31 points to each group to get a zero. The scores obtained from each subgroup on this count will be at most 61 and at least 1.

Reliability of Aggressiveness Inventory: The reliability of the aggressiveness inventory was developed by İpek İlter KİPER in 1984.

Analysis of Data: In our study, homogeneity and variance analyzes were performed by recording the responses of the students to their demographic characteristics and aggression inventory.

The Independent Samples t test was used to compare school type, gender and non-sports parameters, One Way Anowa test was used to determine differences between groups for more than one feature, and Tukey test was used to determine which groups differed. While cronbach's Alpha value was determined to be 0.87 for all of the items in the aggression inventory for our study, Cronbach's alpha was found to be 0.81 for the subversive aggression subscale, 0.80 for the assertiveness subscale, and 0.79 for the passive aggression subscale.

Statistical analyzes: The available data were calculated and the results were analyzed according to the SPSS 10.00 program. According to the normality test, t-test and One-Way ANOVA were used for the parametric tests which is independent of the parametric tests, and Mann-Whitney U and Kruskal Wallis H tests were used for the nonparametric tests. According to the homogeneity of variance, Tamhane and Tukey tests were used from Post Hoc Multiple Comparisons tests. Frequency and % calculations for the independent variables are also made. Pearson correlation coefficient was calculated to determine the relationship among sub-dimensions of aggression. In this study, the error level is $p<0.05$ and $p<0.01$

RESULTS

Table 1. table for number of students by gender and sport in private and state schools

	Public Schools		Private Schools		Total
	Female	Male	Female	Male	
Athlete	150	150	150	150	600
Non-Athlete	150	150	150	150	600
Total	300	300	300	300	1200

Table 1 shows the numerical distribution of students in the study we conducted on a total of 1200 students, 600 in 600 private schools in public schools.

Table 2. According to the types of school destructive aggression, assertiveness, passive aggression, and general aggression the scores of.

School Type	Number of Students	Percentage %	Disruptive Aggressiveness x±Ss	Assertiveness x±Ss	Passive Aggression x±Ss	General Aggression x±Ss
Public	600	50,0	31,44±12,31	42,94±11,49	27,75±12,20	102,12±26,99
Private	600	50,0	34,86±12,47	44,93±9,67	29,92±12,46	109,72±26,90
		t	0,46	13,63	1,27	1,40
		P	,000*	,001*	,002*	,000*

* p<0,05 Significant difference between groups

As seen in Table 2, average of destructive aggression of students in public schools (31.44±12.31) were found to be lower than the average of students in private schools (34.86 ±12.47), and the difference was statistically significant (P<0.05). The averages (42,94±11,49) of the students attending public schools in the assertiveness subscale were lower than the average of the students in the private school (44,93±9,67) and the difference was statistically significant (P<0,05) . In the passive aggression subscale, the average of the students in public schools (27,75 ±12,20) was lower than the average of the students in private schools (29,92±12,46) and the difference was statistically significant (P<0,05). It was found that the general aggression averages (102,12±26,99) of the students in public schools were lower than the average of the students in private schools (109,72±26,90) and the difference was statistically significant (P<0,05).

Table 3. According to the genders destructive aggression, assertiveness, passive aggression, and general aggression scores

Gender	Number of Students	Percentage %	Disruptive Aggressiveness x±Ss	Assertiveness x±Ss	Passive Aggression x±Ss	General Aggression x±Ss
Males	600	50	34,57±12,30	43,20±11,20	30,23±12,11	107,99±27,57
Females	600	50	31,74±12,56	44,67±10,05	27,45±12,48	103,85±26,69
		t	1,43	3,36	1,53	0,47
		P	,000*	,017*	,000*	,008*

* p<0,05 Significant difference between groups

As seen in Table 3, it was determined that the average of destructive aggression of males (34,57±12,30) was higher than the average of females (31,74±12,56) and the difference was statistically significant (P<0,05). In the assertiveness subscale, the average of males (43,20±11,20) was lower than the average of females (44,67±10,05) and the difference was statistically significant (P<0,05). In the passive aggression subscale, the average of males (30,23±12,11) was higher than the average of females (27,45±12,48) and the difference between them was statistically significant (P<0,05). The general aggression averages were higher in males (107.99±27.57) than in females (103.85±26.69) and the difference was statistically significant (P<0,05).

Table 4. According to the grades destructive aggression, assertiveness, passive aggression, and general aggression scores

Grade	Number of Students	Percentage %	Disruptive Aggressiveness x±Ss	Assertiveness x±Ss	Passive Aggression x±Ss	General Aggression x±Ss
9.Grade	472	39,3	32,20±12,55	44,12±10,48	28,23±12,46	104,55±26,95
10.Grade	315	26,2	33,95±13,13[b]	43,03±10,99	30,31±12,77[a]	107,29±30,13
11.Grade	273	22,8	34,58±11,85[b]	44,29±10,41	29,31±11,44	108,18±24,32
12.Grade	140	11,7	31,75±11,85[a]	44,64±10,94	26,66±12,59[b]	103,06±26,13
		F	3,13	1,10	3,46	1,81
		P	,025*	,348	,016*	,14

* p<0,05 Significant difference between groups

Table 4 shows that the mean of the 10th grade (33,95±13,13) and the 11th grade (34,58±11,85) in the destructive aggression subscale were higher than the other grades and the difference was statistically significant (P<0,05). It is seen that the 12th grade averages (31.75±11.85) were lower in the destructive aggression subscale than the other grades and statistically significant (P<0,05). In the passive aggression subscale, the averages of the 10th class (30,31±12,77) are higher than the other class averages and the difference is statistically significant (P<0,05). The mean of the 12th grade (26.66±12.59) was low and the difference was statistically significant (P<0.05). It was determined that the difference in general aggression level and assertiveness sub-dimension according to the classes was statistically insignificant (P>0,05).

Table 5. According to the age destructive aggression, assertiveness, passive aggression, and general aggression scores

Age	Number of Students	Percentage %	Disruptive Aggressiveness x±Ss	Assertiveness x±Ss	Passive Aggression x±Ss	General Aggression x±Ss
Under 14 years	45	3,8	26,80±14,70[a]	44,80±9,67	25,16±12,54	96,76±27,03[a]
15 Years	400	33,3	31,77±11,91	42,79±10,99	28,03±11,94	102,58±26,50
16 Years	346	28,8	34,73±12,78[b]	44,05±10,62	30,45±12,71	109,23±28,65 [b]
17 Years	288	24,0	34,50±12,48[b]	44,91±10,10	29,37±12,27	108,78±26,05[b]
Above 18 Years	121	10,1	32,35±11,67	44,74±11,08	26,98±12,40	104,07±26,11
		F	6,60	2,02	3,75	5,07
		P	,000*	,09	,0052	,000*

* p<0,05 Significant difference between groups

According to Table 5, it was determined that the difference among the groups according to ages in the assertiveness and passive aggression subscale was statistically insignificant (P>0,05). In the subscale of destructive aggression, it was determined that 16 years old (34,73±12,78) and 17 years old group ratio (34,50±12,48) were higher than the other age groups and statistically significant (P<0,05). 14 and under 14 age group (26.80 ±14.70) were lower than the other age groups and the difference was statistically significant (P<0.05). It was determined that general aggression levels were higher in the age group of 16 (109,23±28,65) and 17 years group (108,78±26,05) than the other age groups and statistically significant (P<0,05). 14 and under14 age groups (96,76±27,03) were lower than the other age groups and the difference was statistically significant (P<0,05).

Table 6. According to the states of doing sports, or not doing sports destructive aggression, assertiveness, passive aggression, and general aggression scores

Doing Sports	Number of Students	Percentage %	Disruptive Aggressiveness x±Ss	Assertiveness x±Ss	Passive Aggression x±Ss	General Aggression x±Ss
Sportsmen	600	50,0	33,51±12,36	44,56±10,55	28,61±12,71	106,68±27,25
Non-Sportsmen	600	50,0	32,79±12,65	43,31±10,74	29,07±12,04	105,16±27,15
		t	0,53	0,88	1,8	0,02
		P	0,31	0,41	0,52	0,33

* p<0,05 Significant difference between groups

In Table 6, there was no statistically significant difference between the groups in terms of general aggression according to whether they did sports or not and in all sub-dimensions (P> 0,05). It is seen that the rate of passive aggression is higher among those who do not play sports, while the rate of destructive aggression, assertiveness and general aggressiveness are high in sportsmen.

Table 7. School type according to destructive aggression, assertiveness, passive aggression, and general aggression scores

School Types	Number of Students	Percentage %	Disruptive Aggressiveness x±Ss	Assertiveness x±Ss	Passive Aggression x±Ss	General Aggression x±Ss
Vocational High School	328	27,3	31,97±13,52[b]	45,88±9,29[a]	27,66±13,37 [b]	105,51±27,99
Sports High School	124	10,3	36,51±10,80[a]	39,00±11,02[c]	32,27±11,77[a]	107,78±28,72
Science High School	77	6,4	30,06±11,43[b]	46,03±9,20[a]	26,91±11,44 [b]	103,00±23,25
Anatolian High School	671	55,9	33,46±12,27	43,65±11,06[b]	29,00±11,97 [b]	106,11±26,96
		F	5,721	14,08	4,889	,526
	P	t	,001*	,000*	,002*	,665

* p<0,05 Significant difference between groups

In Table 7, it was determined that the mean of the students of the sports high school (36,51±10,80) in the subscale of aggression subscale was higher than the other groups and statistically significant (P<0,05). The mean of the vocational high school students (31.97±13.52) and the average of science students (30.06±11.43) were lower than the other groups and the difference was statistically significant (P<0,05). In the assertiveness subscale, the difference between all groups was statistically significant (P<0.05). In the assertiveness subscale, it was found that the high school lychees (46,03±9,20), the high school seniors (45,88±9,29) and the average of the anatolian high school students (43,65±11,06) were high and the assertiveness averages ±11,02) were lower than the other school groups and the difference was statistically significant (P<0,05). In passive aggression sub-dimension, the difference between the groups was found to be statistically significant (P<0.05). The mean of passive aggression (32,27±11,77) of sports high school students was higher than the other groups and the average of science high school students (26,91±11,44) was lower than the other groups and the difference was statistically significant (P<0,05). There was no statistically significant difference between groups in general aggression dimension (P>0,05).

DISCUSSION AND CONCLUSION

In our study, a questionnaire consisting of two parts was conducted as a means of gathering information. The first part is the section where the demographic information belongs to the participants and the second part is the aggressiveness inventory which is used to determine the general aggression and aggressiveness sub-dimensions. The reliability of the used aggressiveness inventory was developed by İpek İlter KİPER (1984). The same inventory will be preferred in many scientific studies and will give us an advantage in comparing the results of our studies al (13,16,18,27).

We did our work on a total of 1,200 students studying in private and public schools located in the Selçuklu district of Konya. (Table 1) In the study of Scharf (28) 129, Giles & Heyman (29) 41, Dervent (13) 354, Yıldız (27) 600 We tried to determine the aggressive behavior on 600 secondary school students. In similar studies ,such as in the study of Solak (23), there are 514 students, Bayram (30) 1452, Yılmaz (25) 400, Karabulut (20) 128, Oproiu (31) 106 , Çakır (16) 490, Gökçiçek (19) 1868, Keskin (21) 400 it was tried to determine the levels of aggression on the student.

When we look at the numbers of samples in similar studies, it is seen that sample numbers are around 41-1868 in general. In the studies conducted, the average number of samples seems to be concentrated around 200-400 students. The number of researchers using 1000 samples and above is very limited (19,30). However, the fact that our study was carried out on 1,200 students is important both in terms of its independence and its statistical reliability.

The general aggressiveness and the average of all sub-dimensions of private schools are higher than the public schools and the difference is statistically significant (P<0,05). (table 2). Menteş (32) reported that high school athletes had higher averages of assertiveness of normal high school students and low assertiveness levels of private schools, and that the difference was statistically significant, according to the study of high school students in determining the athletic effect on the assertiveness level. While we have negatively impacted the comparison of the results of limited studies with private schools before ours, our results with the above study are not compatible.

It was determined that the average of destructive aggression, passive aggression and general aggression in males who attended private and public secondary schools were higher than females and the difference was statistically significant (P<0,05). In the assertiveness subscale, the average of males was lower than females and the difference was statistically significant (P<0,05). (table 3).

Keskin (21) has dealt with the aggression behaviors of the students in secondary education in Zonguldak with different dimensions. He determined that males had higher destructive aggression scores than females and that females had higher assertiveness scores than males. Çakır (16) has determined that male athletes are more aggressive than girls in their study of the athletes' study of aggression. Karabulut (20) determined that female hockey athletes under 16 years of age had a higher assertiveness score than males and males had higher levels of destructive aggression and general aggression than females. Bayram (30) reported that males athletes who did or did not play in the 14-18 age group were more aggressive than female students in their study of aggression levels. Yıldız (27) found that the average score of the women in the average aggression was high when they were working with secondary school students who do sports and do not play sports; and that the score of men is high in the case of destructive aggression.

Dervent (13) reported in determining the relationship between sport and aggressiveness that girls doing sports were more playful than boys doing sports, and were close to one of the other odds. Menteş (32) reported in a study of high school students about the determination of the sport effect on the assertiveness level, depending on sex that girls were more playful than boys.

When we examine the studies done in this subject, it is seen that men generally have destructive aggressiveness, passive aggression and general aggression averages, and girls have high averages of assertiveness, and these studies support our results.

When the destructive aggression at the class level is examined, it is seen that the destructive aggressiveness is high in the 10th and 11th grades and the difference between the groups is significant (P<0,05). Passive aggression subscale is higher in the 10th grade and the difference is statistically significant (P<0.05). It was determined that the difference between the classes in the subscale of general aggression and assertiveness is meaningless (P>0,05). (table 4).

Özyürek & Özkan (33) as a result of studying the relationship between the anger levels of the adolescents and their attitudes towards the parents, determined that as the class level increases, the hostile attitudes and beliefs about the students increase. Gündoğdu (34) determined meaningful differences in various sub-dimensions according to the criteria such as gender, material situation in his study conducted by 9th grade student in Mamak district Ankara. Efilti (35) in a comparative study between the aggression and control of students in secondary education institutions, determined that the level of aggression of high school third graders is higher than that of high school second graders, and that the difference is significant. Karataş (36) reported in his classroom-level study that 11th grade students had higher scores on aggression than other class levels, and that this may be the upcoming university exams.

It is evident that the results obtained in similar studies, especially the results of the 11th grade, support our results. Although there is an opinion in society that the aggressiveness averages increase as the class grows, the results in our study show that the average aggression of the 12th graders is lower than all classes.

According to ages, the difference between the groups in assertiveness and passive aggression subscale was statistically insignificant (P>0,05). It was determined that the mean of the 16 and 17 age groups were higher than the other age groups according to ages in the destructive aggression subscale and general aggression dimension and the difference was statistically significant (P<0,05). (table 5).

Oda (37) examined the level of aggression and optimism of students who did and did not play sports between the ages of 11-13, and stated that there was no significant difference. Ersoy et al. (38) aimed to determine the aggression levels of young wrestlers aged between 16 and 18 with sociodemographic methods. In the analysis of the data, they examined the level of aggression by age and it was determined that there was no meaningful difference in the results of different analyzes between the aggression levels of the groups. Oproiu (31) studied aggression behavior in the 14-19 age group playing in national soccer teams in his work on sport and aggression.He reported that According to the 14-15 age group, aggression level of the 17-18 age group is quite high. Karabulut (20) examined the aggression level of Turkish hockey athlete under 16 in our country. He reported that age and aggressive aggression were directly related to the sport.

The results of studies carried out before us in different age groups are quite different. However, the general aggression average of the 16 and 17 age group generally supports our work.

There is no significant difference in the dimension of assertiveness, passive aggression, destructive aggression and general aggressiveness in the groups that did and did not play sports (P>0,05). While the average of destructive aggressiveness, assertiveness and general aggressiveness were found to be high in sportsmen, the average of passive aggressiveness in non-sportsmen was found to be high. (table 6).

Oda (37) investigated the level of aggression and optimism of students who did or did not play sports between the ages of 11-13. He reports that According to the obtained data, there was no significant difference in aggression and optimism scores between those who do and those who do not. Çetin et al. (18) determined that there is no meaningful difference in passive aggression among those who do sports and those who do not do sports as a result of studying with students who study in the Physical Education and Sports Teaching Department. Reza (39) reported that the athletes' violent tendencies were not related to sport in their study of university

students in various sports to compare aggression behaviors.

Gökçiçek (19) tried to determine the aggression level of the students who do and do not participate in secondary education. The researcher concluded that sportsmen are more aggressive and agile than those who do not do sports. Keskin (21) dealt with aggression behaviors in different dimensions in the study ,which she conducted in Zonguldak province, in order to determine the levels of aggression of secondary school students. He dealt with aggressive behavior in different dimensions. It has been seen that those who play 5 years and more show more aggressive behaviors than those who play 4 years and less. Çakır (16) determined that the aggression behavior of the athletes increased with age in his study of secondary school students who participated in sporting events to determine the level of aggression. Yılmaz (25) examined the relationship between empathic tendency and aggression levels in secondary school students who do and do not play sports, and as a result, they pointed out that the average scores of the aggression and all aggression subscales of the sportsmen were higher than the non-sportsmen. Akoğuz (40) stated that the level of aggressiveness of the athletes was not high in the research which was conducted to determine the level of aggression in university students and to reveal the relation of aggressiveness with sport.

In general, we see that the above results are in support of our results. We do not see any significant difference between students who do sports and those who do not. However, those who do sports do not do sports, and those who have a high level of aggression are overlapped with the work done before us again.

There is no statistically significant difference between general aggression groups according to school types (P>0,05). It is determined that the average of the sports high school is higher in the destructive aggression subscale, the average of the profession and science school is lower and the difference between the groups was statistically significant (P<0,05). In the assertiveness subscale, the difference between the ratios of all groups was found to be statistically significant (P<0,05). It is determined that the average of science high school is high and the average of sports high school is low compared to other school groups. Passive aggression subscale is statistically significant (p<0,05). It is found that there is a significant difference between all school groups and that the average of sports high school is higher than other school groups and the mean of science high school is lower than other school groups. (table 7).

Efilti (35) as a result of her work with secondary school students, reported that high school students and high vocational high school students had higher levels of aggressiveness than science high school and religious high school and the difference is statistically significant. Menteş (32) reported that high school athletes had higher averages of assertiveness of normal high school students and low assertiveness levels of private schools, and that the difference is statistically significant, according to the study of high school students in determining the athletic effect on the assertiveness level. Çakır (16) determined that the athletes who were educated in vocational high schools were more aggressive than the general high school students in their study of secondary school students.

Preliminary studies have shown that while the school scale is limited, we can not make a healthy comparison, but when the results of the studies are examined, the average of the sports non-athletic subscales is high enough to support our work.

As a result of our efforts to determine the aggression levels of sportemen and non-sportsmen students who study in private and state secondary schools, it has seen that the students who are educated in private schools have a higher average in the dimension of destructive aggression, assertiveness, passive aggression and general aggression than students in public schools. Generally speaking, in groups we found out that there are high level of assertiveness and destructive aggressiveness, while passive aggressiveness was low. In sum, it can be said that sport increases assertiveness and destructive aggression and reduces passive aggression.

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The effect of Futsal Training on the Speed, Agility, and Anaerobic Power of Male Children Aged 12-14 Years Old

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Abstract

The present study aimed to investigate the effect of 6-week futsal training on the speed, agility, and anaerobic power of male children aged 12-14 years old. A total of 20 male students from Ayşe Fitnat Middle School voluntarily participated in this study. Their mean age was 13.50±0.51 years, the mean length was 1.61±0.06 meters, the mean weight was 50.23±8.43 kg, and the mean body-mass index was 19.42±2.74 kg/m2. 10 participants were assigned to participate in futsal training, and the other 10 formed a control group. The research was designed as an experiment that included a pre-test and post-test within the control and experimental groups. The experimental group (Futsal) participated in a 6-week futsal training with 3 days a week and an hour a day of practice. To evaluate both groups' physical and motor capacities, length, weight, body-mass index, 20m-sprint test, agility test, vertical jump test, and anaerobic power tests were applied. All statistical analyses were performed by IBM SPSS 23.0 computer program. The level of significance was set as $p<0.05$. There was a statistically significant difference in the experimental group's pre-test and post-test values in the 20 m sprint test, agility, vertical jump, and anaerobic power measurements ($p<0.05$). However, no statistical significance was determined in the control group. Post-test results between the experimental and control groups revealed that the experimental group significantly had better 20 m sprint, agility, and vertical jump scores than the control group ($p<0.05$). Even though there was no significant difference in anaerobic power between the two groups, the experimental group had substantially higher values compared to the control group. As a result, it can be concluded that 6-week futsal training three days a week and an hour a day can improve the speed, agility, and anaerobic power among male children aged between 12 and 14 years old.

Keywords: Futsal, Speed, Agility, Anaerobic power

Futsal Antrenmanlarının 12-14 Yaş Erkek Çocuklarda Sürat, Çeviklik ve Anaerobik Güce Etkisi

Özet

Bu çalışmanın amacı, 12-14 yaş erkek çocuklarda 6 haftalık futsal antrenmanlarının sürat, çeviklik ve anaerobik güce etkisini araştırmaktır. Araştırmaya Ayşe Fitnat Ortaokulunda okuyan yaş ortalamaları 13.50±0.51 yıl, boy ortalamaları 1.61±0.06 m, vücut ağırlığı ortalamaları 50.23±8.43 kg ve beden kitle indeksi (BKİ) ortalamaları 19.42±2.74 kg/m2 olan 10 futsal ve 10 kontrol grubu olmak üzere rastgele seçilmiş toplam 20 gönüllü erkek öğrenci katılmıştır. Araştırma ön-son test kontrol gruplu model olarak tasarlanmıştır. Futsal grubuna 6 hafta boyunca haftada 3 gün 1 saat futsal maçı yaptırılırken kontrol grubuna herhangi bir aktivite yaptırılmamıştır. Grupların fiziksel ve motorik kapasitelerini değerlendirmek için boy uzunluğu, vücut ağırlığı, BKİ, 20 m sprint testi, çeviklik testi, dikey sıçrama testi ve anaerobik güç ölçümleri alınmıştır. Çalışmada tüm istatistiksel işlemler IBM SPSS İstatistik 23.0 programı ile gerçekleştirilmiştir. Araştırmada anlamlılık seviyesi $p<0.05$ olarak kabul edilmiştir. Futsal grubunun ön-son test ölçüm verileri karşılaştırıldığında 20 m sprint, çeviklik, dikey sıçrama ve anaerobik

güç değerlerinde istatistiksel olarak anlamlı bir fark elde edilmiştir ($p<0.05$). Buna karşın kontrol grubunda herhangi bir istatistiksel anlamlılık söz konusu değildir. Futsal grubu ile kontrol grubunun son testleri karşılaştırıldığında 20 m sprint, çeviklik, dikey sıçrama değerlerinde futsal grubu lehine istatistiksel olarak anlamlı bir fark bulunmuştur ($p<0.05$). Anaerobik güç değerleri açısından iki grup arasında istatistiksel olarak anlamlı bir fark bulunmamasına rağmen futsal grubunun anaerobik değerleri daha yüksektir. Bu çalışmanın bulgularına göre 6 hafta boyunca haftada 3 gün 1 saatlik futsal antrenmanlarının 12-14 yaş erkek çocuklarda sürat, çeviklik ve anaerobik gücü olumlu yönde geliştirdiği söylenebilir.

Anahtar sözcükler: Futsal, Sürat, Çeviklik, Anaerobik güç.

INTRODUCTION

Futsal is the internationally recognized and supported version of indoor football by FIFA (Federation de Football Association). FUTSAL, which originated from Futebol De Salao in Portuguese or Football De Sala in Spanish, is the shining new face of FIFA and UEFA's five-person indoor football. It is a high-intensity and intermittent sport distributed over a short recovery period, in which accelerations and short sprints are exhibited at or near-maximal levels during a short period, played by over one million players worldwide and growing in many countries (11).

One of the most critical factors that bring success in sports is the motor skills required for that branch. Basic motoric features of humans are the elements that determine the person's body, power and ability, and the degree of complex motorsports power. These features are the basis and primary condition of every motoric sports movement performed during the training process (2).

Agility is very essential for many sports (41) including this sport as the players have to change their directions very fast with respect the opponents' movements and to save the ball (37). Thus, players should need high decision-making process and speed (36), which can be developed through long-term the center of gravity of speed training (40).

A futsal player is a player who moves quickly on the field of play throughout the match and increases in offense and defense, plays well one-on-one, shrinks in defense, and is not easily deceived, and covers the distance with and without the ball in the attack, shoots well, and achieves all of these with a tempo close to 80-100%. Therefore, it needs good anaerobic power and capacity (34). Anaerobic performance has been reported to be affected by muscle type, gender, age, genetic, muscle mass, cross-sectional muscle area, training, and body composition (35). Anaerobic performance causes some morphological, physiological, and biochemical changes in the organism, changes in the process from childhood to maturity (27). Physical activity, which has a crucial place in developing, protecting, and continuing public health, has vital importance in children's growth and development process. Because physical activity has many positive effects in childhood and adulthood in terms of psychological, physiological, and physical aspects, it is essential to gain the level of physical fitness necessary for maintaining life at optimum efficiency. In addition to performance sports, in today's life concepts, the primary purpose of the child to do regular sports in a balanced and healthy development should be to increase cardiovascular endurance, neuromuscular coordination, strength, and flexibility. These features should be gained through practices made with a pedagogical approach under the forms of play in preschool and primary school children (31). From this point of view, this study aimed to investigate the effects of Futsal training on Speed, Agility, and Anaerobic power in 12-14-year-old boys.

MATERIAL AND METHOD

Research Group: This research was carried out in the 2nd semester of the 2016-2017 academic year (March-April). 20 healthy male students, randomly selected among the students studying at Ayşe Fitnat Secondary School affiliated with the Ministry of National Education and who filled in and brought the necessary participant information form from their families, participated in this research. The descriptive physical characteristics of the students participating in the research are presented in Table 1. Before the study, a detailed information meeting was held with the students and their parents about the research. For the research, permission was obtained from the clinical research ethics committee of Mustafa Kemal University Tayfur Ata Sökmen Medical Faculty (Decree No: 2017/38, 24.02.2017).

Table 1. Physical descriptive characteristics of male students participating in the research.

PARAMETER	N	Mean	SD
Age (years)	20	13.50	0.51
Height (m)	20	1.61	0.06
Body Weight (kg)	20	50.23	8.43
BMI (kg/m²)	20	19.42	2.74

SD: Standard deviation

Study Design: Three days before the initiation, two groups of 10 each, each Futsal (FG) and Control group (CG), were formed randomly from the participants, and the pre-test measurements of the groups were obtained. Futsal training is organized according to the competition method. According to this method, the futsal group played a futsal match for 1 hour a day (5 min warm-up – 20 min 1st half – 10 min break – 20 min 2nd half – 5 min cooldown and stretching), 3 days a week (Monday-Wednesday-Friday) for 6 weeks. Futsal matches were played in the 34x18 m indoor. No planned activity was performed in the control group during the 6 weeks. Post-test measurements of all participants were made 3 days after the last training.

Height, Body Weight, and Body Mass Index (BMI): The height (±0.1 cm) and body weight (±0.1 kg) measurements of the students participating in the study were made with a stadiometer (Seca 217, UK). The following formula was used to determine the body mass index (39,42).

Body Mass Index (BMI) = Body Weight / Height $(m)^2$

Agility Test (Illinois Agility Test): The test consists of a 40 m straight, and 20 m slalom run between the cones, consisting of three cones with a width of 5 m, a length of 10 m, and three cones with 3.3 m intervals in the middle and 180º turn every 10 m. After the test track was prepared, a two-door photocell electronic chronometer (Seven Electronics, Turkey) system was installed at the beginning and the end, measuring with an accuracy of 0.01 seconds. Before the test, the participants were allowed to make 3-4 attempts at low tempo after introducing the track and necessary explanations. After that, the participants were given warm-up and stretching exercises at a low tempo for 5-6 minutes. Participants were made to exit from the starting line of the test track in the prone position with their hands in contact with the ground at shoulder level. The time to finish the track was recorded in seconds. The test was repeated 2 times with complete rest, the better value was recorded (21,24,33).

Speed Test (20 m Sprint Test): The speed performances of the participants were determined by the 20-meter sprint test (6). A two-door photocell electronic chronometer (Seven Electronics, Turkey) system was installed at the beginning and end of the 20 m track with an accuracy of 0.01 seconds. Participants started the sprint run with a high start of 50 cm behind the starting line. Two attempts were made, and the best grade was recorded in seconds and evaluated.

Vertical Jump Test and Calculation of Anaerobic Power: Vertical jump measurements of the participants in the study were taken with shorts, t-shirts, sneakers, and a jump meter (Seven Electronics, Turkey) jump measurement device. Care was taken to ensure that the participant's position during the jump and landing on the platform remained the same, that the knees were not drawn to the chest, and not bent backward. The vertical jump was performed twice, and the best grade was recorded in cm (39, 42). Anaerobic power was calculated in kg-m/sec according to the Lewis formula (18).

P= (√4.9 x (Body Weight) x √D), P = Anaerobic Power (kg. m/sec.), D = Vertical Jump (m)

Analysis of Data: Mean and Standard Deviation (SD) were used as descriptive statistics. Since the number of people participating in the research was less than 30 and it was determined that the distribution was not normal with tests for the normality of the distribution [statistical (Shapiro-Wilk, Skewness, Kurtosis) and graphical (Histogram, Box plot, Q-Q plot)], non-parametric tests were used for comparisons. Wilcoxon test was used for within group pretest-posttest comparison, and the Mann-Whitney U test was used for between group comparison. $p<0.05$ was determined as a statistical significance level in this study. Statistical data analysis was done using IBM SPSS for the Windows (V 23. New York, USA) package program.

RESULTS

When the data obtained with the pre-tests were examined, no statistically significant difference was determined between the control and futsal groups in terms of all variables. This result is critical in demonstrating that the groups are at a similar level before futsal training.

At the end of the 6-week study, no statistically significant difference was observed in all variables of

the control group from pre-test to post-test. However, when the mean values were examined, a positive and statistically significant improvement was determined in all parameters of the futsal playing group (Table 2).

Table 2. Comparison of groups in terms of parameters

		PRE-TEST		POST-TEST				U
PARAMETER	GROUP	mean	SD	mean	SD	z	p	p
Bodyweight (kg)	CG	50.99	8.00	50.93	7.95	-1.73	0.08	36.00
	FG	49.47	9.21	49.26	9.02	-2.21	0.03*	0.29
BMI (kg/m²)	CG	20.15	3.01	20.13	2.99	-1.68	0.09	32.00
	FG	18.68	2.36	18.60	2.28	-2.20	0.03*	0.17
20 m Sprint (sec)	CG	3.80	0.18	3.86	0.23	-1.27	0.20	1.50
	FG	3.77	0.18	3.44	0.09	-2.81	0.01*	0.01#
Agility (sec)	CG	19.89	0.41	20.07	0.28	-0.76	0.45	16.00
	FG	19.58	0.35	18.51	1.03	-2.40	0.02*	0.01#
Vertical J. (cm)	CG	27.43	1.81	27.28	2.73	-0.26	0.80	17.00
	FG	27.77	1.37	30.94	3.42	-2.70	0.01*	0.01#
Anaerobic Power (kg.m/sec)	CG	82.43	6.83	82.13	7.57	-0.36	0.72	39.00
	FG	81.75	7.80	86.06	9.22	-2.70	0.01*	0.41

* pre-test - post-test comparison p<0.05, # groups (CG-FG) comparison in terms of post-test p<0.05.

When the groups were compared in terms of post-test, the futsal group's speed, agility, and vertical jump values were statistically significantly better than the control group (Figure 1). However, although not statistically significant, the futsal group was better than the control group in terms of other variables (body weight, BMI, and anaerobic power).

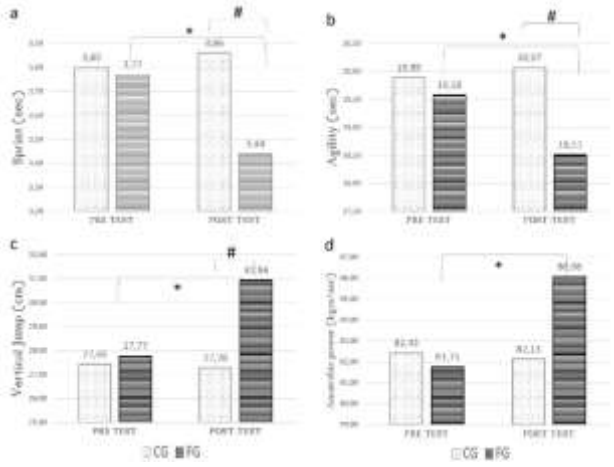

Figure 1. Comparison of groups: a: Sprint, b: Agility, c: Vertical Jump, d: Anaerobic power * pre-test - post-test comparison p<0.05, # groups (CG-FG) comparison in terms of post-test p<0.05,

DISCUSSION

The present study revealed significant differences in the data on speed, agility, and anaerobic power of boys aged 12-14 who did regular futsal training for 6 weeks compared to boys who did not do a regular physical activity outside of physical education class (Figure 1).

Although the ability to speed is innate, it can be developed to a certain extent with training. This development is especially dependent on motoric, physiological, and anthropometric characteristics that affect speed (4). Since players take an active role in both defense and offense in a small area, and the game has a high intensity, fast-playing character, futsal requires players to sprint more and be active. As a matter of fact, in comparisons made on the speed and acceleration of futsal and football players, significant differences were found in favor of futsal players (30,25,20). Besides, the reduced playing field constantly causes pressure from the opposing player, and futsal players are constantly under the mark and in one-on-one situations with the opponent. Also, the small size of the field and frequent turnovers necessitates the players to make quick decisions and have a high sprint capacity in the sections where the teams are attacking or defending (32). It was stated that, as in basketball and handball, a large part of the futsal game includes high-intensity sprint activities, and 8.9% of the distances covered during a futsal match are sprints (8). Kicking the ball requires speed, endurance, strength, and power for turns, tackles, and changes in speed (19). In our study, mass movements, changes of direction, running, sprints, sudden stops, and jumps applied during futsal training created a load on the leg muscles. While performing these movements, the eccentric and concentric contraction of the leg muscles ensures that the elastic and contractile components are activated together. This situation causes the muscle to release force quickly (29). Armstrong et al. (5) indicate that Type IIa fibers may be more common than Type IIx

fibers in children and adolescents. It was suggested that the increase in motor unit activation, together with neurological development, may contribute to the short-term increase in power output independent of the growth in muscle mass (13,5). It is thought that the significant difference in speed in this study may be due to the development of leg muscles and neurological adaptations to training.

While agility is defined as the speed of change of direction, it is stated that acceleration, deceleration, and change of direction speed should be improved for performance (15). Futsal includes movements with and without the ball, jumps, and rapid direction changes. Offensive sports with a high level of speed, such as futsal, are placed in the category of sports that require fast running (acceleration and maximum speed) and agility (23). In a study in which the match analysis of the national futsal teams of Turkey, Italy, and Russia, it was found that Turkey met the ball 297 times and ran 34 times without the ball, and was able to control the ball for an average of 8 seconds in each attack, Italy met the ball 731 times, ran 176 times without the ball and held the ball for an average of 11 seconds, Russia met the ball 628 times, managed to control the ball for an average of 15 seconds by running 150 times without the ball. Another study reported that English Premier League football players made 609 turns within 0-90 degrees angles to the right-left in a match, and they made 95 turns above 90 degrees (12). A different study indicated that futsal players make locomotor movement changes every 3.3 seconds in a match (17). A study performed with football players states that jumping, changing direction, and accelerations between 1000-1400 for a short period of 4-6 seconds often occur during the game (38). As the analyzes in the studies clarify, futsal is a game that is played very quickly, and there are constant turnovers. In this context, to develop the ability to change direction at the highest level, athletes have to train the movements they perform in practice (14). Agility performance increases with age and is further improved with repetitions and physical activities. Activities such as physical competitions and games have an important place in developing agility (16,10). It is thought that the 5.46% significant improvement in agility at the end of the 6 weeks is due to the futsal training, as can be understood from the basic motoric features it contains depending on the general characteristics of the futsal game and from the studies in the literature.

Anaerobic power values of the group participating in futsal training increased significantly at the end of the 6 weeks. When the groups were compared in terms of post-tests, although there was no statistically significant difference, it was observed that the anaerobic power averages of the futsal group were higher than the control group (Figure 1d). All movements performed at a very high tempo during the competition require futsal players to use a high level of anaerobic power (34). A study including futsal players noted that the average heart rate was 170-190 beats/min, and the maximum heart rate reached 85-90% during the match, which was due to high anaerobic metabolism (8). In futsal, movements related to anaerobic energy, performed at high intensity and in a short period, frequently occur (34). Doğramacı and Watsford (17) revealed that futsal players performed high-intensity activities in 26% of the playing time during a match. Another study stated that 13.7% of the distances covered during the game during the Futsal match were in the form of high-intensity running (8). Also, it was reported that while running at a moderate intensity every 37 seconds and a high intensity every 43 seconds, a maximum intensity effort occurs every 56 seconds (7). In high-intensity, short-term loads, anaerobic power is based on the use of the phosphagen system (ATP-PC system), depending on the re-synthesis process of ATP, while anaerobic capacity is predominantly based on the use of the lactic acid energy system (anaerobic glycolysis) (9). Krustrup et al. reported that glycogen and creatine phosphate stores were depleted in type II fibers at the end of the Yo-Yo intermittent recovery 1 test they applied to football players, but there was no significant decrease in Type I fibers. (28). During futsal training, movements related to anaerobic energy occur at high intensity in a short time, such as changing direction, short-distance sprints, sudden stops, headshots, jumping, and the frequency of use of these movements may have increased and improved energy use. Therefore, it is thought that the increase in anaerobic power is due to futsal training, depending on the explanations above. The literature supports the findings of this study in that it shows that the anaerobic power values of children who participate in sports activities and have a high level of physical activity are higher than their inactive peers (27,22,26,1).

In conclusion, futsal training 3 days a week, 1 hour a day for 6 weeks, is considered to positively

improve speed, agility, and anaerobic power in 12-14-year-old boys. However, in similar studies to be performed in the future, different dimensions may be added to the subject depending on the sample size, age range to be studied, gender differences, and longitudinal or cross-sectional research design.

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Determination of Awareness Towards Olympic Concepts of National Athletes Who Students in Düzce University Sport Sciences Faculty

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Abstract

The aim of this study was to determine the awareness towards olympic concepts of national athletes who students in Düzce University Sport Sciences Faculty. The research is a descriptive research and phenomenological design has been used. In the research, the method of "easily accessible situation sampling" was preferred. The study group of the research consists of nine national athletes from different branches studying at Düzce University in the 2015-2016 academic year. The data were collected using the interview technique. In the research, 11 questions were asked to the participants in order to measure their awareness of the Olympic concepts. The coding process was carried out by examining the data summarized and interpreted in the descriptive analysis in more detail. After the data was encoded, similar data were brought together and themed. As a result, It was observed that the knowledge level of national athletes participating in the study about the Olympics was not at the level expected from elite athletes. In addition to the elite performance training given to national athletes, it has become clear that training to raise awareness about the Olympics has emerged.

Key Words: Olympism, Olympic Awareness, National Athlete, Olympic Education

Düzce Üniversitesi Spor Bilimleri Fakültesi Öğrencisi Milli Sporcuların Olimpik Kavramlara Yönelik Farkındalıklarının Belirlenmesi

Özet

Bu çalışmanın amacı; Düzce Üniversitesi Spor Bilimleri Fakültesi öğrencisi milli sporcuların olimpik kavramlara yönelik farkındalıklarını belirlemektir. Araştırma betimsel bir araştırmadır ve fenomonolojik desen kullanılmıştır. Araştırmada "kolay ulaşılabilir durum örneklemesi" yöntemi tercih edilmiştir. Araştırmanın çalışma grubu Düzce Üniversitesi'nde öğrenim gören farklı branşlardaki dokuz milli sporcudan oluşmaktadır. Veriler görüşme (mülakat) tekniği ile toplanmıştır. Araştırmada katılımcılara Olimpik kavramlara yönelik farkındalık düzeylerini ölçmek amacıyla 11 soru sorulmuştur. Betimsel analizde özetlenen ve yorumlanan veriler daha detaylı incelenerek kodlama işlemi gerçekleştirilmiştir. Verilerin kodlanmasının ardından benzer veriler bir araya getirilerek temalaştırma yoluna gidilmiştir. Sonuç olarak, araştırmaya katılan milli sporcuların olimpiyatlarla ilgili bilgi düzeylerinin elit sporculardan beklenen düzeyde olmadığı görülmüştür. Milli sporculara verilen elit düzeydeki performans eğitimi yanı sıra olimpiyat bilincine yönelik farkındalık kazandırma eğitimleri verilmesi gerekliliği ortaya çıkmıştır.

Anahtar kelimeler: Olimpizm, Olimpik Farkındalık, Milli Sporcu, Olimpik Eğitim

INTRODUCTION

Olympism is considered as one of the leading phenomena of our age as a philosophy of life that aiming at the development of human mind and personality along with physical skills, thus aiming at the development of all qualities of the human being in a symmetrical form and harmony. At this point, Olympism has literally educational and pedagogical aims and is described as a mood, lifestyle and view of humanity (13)

Olympism, which is a concept beyond sports competitions; friendship, fair-play, sports education, the effort to reach the perfect personality, peace, solidarity, equality, understanding, respect for rules and people, and honesty (11). The Olympic Movement has developed a global network to spread the Olympic values not only through the running of the Olympic Games, but also through the organization of Olympic training programs around the world. The view that values can be internalized and communicated through education is shared by many academics who have developed different approaches to how Olympism can be taught to young people (3).

The way that Olympism can achieve its high ideals; It is possible by bringing about a change, that is, through "education". Olympism chooses sports as a form of education in forming the common ideals of globalization (4). According to Erdemli (7), sports training is not done to create star athletes, on the contrary, it is done to create people who know Olympism. Sporting events that are done without the knowledge of Olympism always have the possibility to turn into a show of brute strength.

Olympic education in the light of the values of Olympism; It is a fundamental social movement that takes care of physical, intellectual and moral forces to improve the quality of life, raising overall development and international understanding. In the Global Era, Olympic education is vital to the vitality of free marketing and business thinking, as well as maintaining the traditional balance between nation states and global markets (14). Olympic Education does not only address young people with the potential to become Olympic athletes worldwide; At the same time, it is an interdisciplinary field that provides an opportunity for those who want to do the best they can and gives our youth the principles such as honesty, discipline, courage, determination, sportsmanship, self-orientation, keeping fit and moral values underlying the Olympics (10).

As a tool for promoting Olympism, the Olympic Training programs guide the global understanding in building the basic principles of the Olympic understanding on different cultures and social groups. Olympic Education is a learning process in teaching this understanding; participants are encouraged to gain knowledge, to understand, try and spread the Olympic principles. This learning process is based on deep educational knowledge and cultural principles of Olympic understanding. At the same time, the process lends the spirit of sportsmanship and enables the Olympic Games athletes to create a model for young people to follow in their lives (8).

The mission of the Olympic training; It can be said that it is to inform people more about the Olympic games, the structure of the Olympic movement and perhaps some of the ideals adopted and the problems encountered (17).

Establishing Olympic awareness is an inevitable necessity in order for sports to have positive effects on individual and social life. Olympic awareness can be expressed as the acceptance of sports as a way of life in the society, the formation of the Olympic spirit and Olympic understanding in the society, and the awareness of everyone, especially youth and athletes, about Olympic concepts. Elite athletes' distancing from Olympic values makes sports antipathetic and negatively affects people who do sports. For this reason, every individual who does sports needs to be educated about Olympic concepts. National athletes who have a high potential to participate in the Olympic games and represent their countries in the international arena are expected to have a high level of Olympic awareness.

METHOD

This research is a descriptive research. Phenomenology formed the pattern of the research. In the research, “easily accessible case sampling” method was preferred among the purposeful sampling methods. The study group consists of nine national athletes from different branches who voluntarily accepted to participate in the study, studying in Düzce University. It has been assumed that the national athletes who study sports sciences should have the highest Olympic awareness when all segments of the society are considered. Participants in the research belong to two different programs, 5 of which are Physical Education Teaching and 4 are students of Coaching Education. 4 of the participants are female and 5 are male students. Participants are

between the ages of 18-21. Data in the study were collected by interview (interview) technique.

Relevant question titles were determined by making a literature review. The questions were tested by conducting pre-interviews with two different participants, and the questions were arranged according to the data obtained. The questions added later in the semi-structured interview form used in the study were asked again to the other participants and the forms were arranged. Eleven questions were asked to the participants to measure the Olympic awareness. The interviews lasted an average of 15 minutes. The answers to the questions asked to the participants were recorded by the researcher and also notes were taken. The data obtained through open-ended questions were analyzed, codings were made with descriptive analysis and main themes were formed. Digitization of qualitative data is a method used to increase reliability and reduce bias in studies. Thus, it is possible to make comparisons between emerging themes and categories (24).

Firstly, descriptive analysis method was used in order to understand what the collected data express about the research problem or what results they reveal. The data, which was turned into prose in the computer environment by the researcher, was tabulated by putting the answers given by the participants to the same questions one after the other. With this method, the data are summarized, arranged and made suitable for content analysis.

The data were summarized and interpreted with descriptive analysis. Afterwards, the data was analyzed in detail and the coding process was carried out. The consistency between the codings was confirmed by comparing the codings made by three researchers who are experts in the field, and after the codification of the data, similar data were brought together and thematized. Thus, an inductive approach was used in the processes related to the analysis of research data.

In order to determine to which participant the interview notes belong, coding was made by giving letters and numbers (K1, K2, K3…). The coding system seen in the example description was developed by the researcher based on the coding systems in the literature.

RESULTS

In the research, firstly percentage and frequency distributions were used for the analysis of the data obtained regarding the awareness of "Olympic concepts" and then codings and themes were created. Percentage and Frequency Distributions of Awareness About Olympic Concepts

In this section, the percentage and frequency distributions of the answers given to the questions asked to the participants in order to understand the awareness of Olympic concepts are included.

Table 1. Do you know the Olympic flag? Can you describe it?

	f	%
5 rings	K1, k3, k5, k6, k7, k8, k9	77.78
4 rings	K2	11.11
6 rings	K4	11.11

In Table 1, "Do you know the Olympic flag, can you describe it?" contains the answers to the question. According to the data in the Table 1, 77.78% of the participants (7 participants) defined the Olympic flag as 5 rings, on the other hand, 1 participant was defined as 4 rings and a participant as 6 rings.

Table 2. What is the name of the top organization of the Olympic movement in our country?

	f	%
TMOK	K1, k2, k4, k5	44,44
No idea	K3, k7, k8, k9	44,44
TOHM	K6	11.11

In Table 2, "What is the name of the top organization of the Olympic movement in our country?" contains the answers to the question. According to the data in the Table 2, 44.44% of the participants (4 participants) stated that the top institution of the Olympic movement in Turkey is the Turkish National Olympic Committee (TMOK), 44.44% of the participants (4 participants) stated that the top institution of the Olympic movement in Turkey, they have no idea about it, one participant stated as Turkey Olympic Preparation Center (TOHM).

Table 3. What is the name of the top organization of the Olympic movement in the world?

	f	%
IOC	K1	11.11
No idea	K2, k3, k5, k6, k7, k8, k9	77.78
World Olympic Committee	K4	11.11

In Table 3, ". What is the name of the top organization of the Olympic movement in the world?" contains the answers to the question. According to the data in the Table 3; 11.11% of the participants (1 participants) stated that the olympic movement in the world is the International Olympic Committee (IOC), 11.11% of the participants (1 participants) stated that World Olympic Committee and 77.78 % of the participants (7 participants) stated that they don't have any idea.

Table 4. What is the motto of the Olympic Games?

	f	%
No idea	K1, K2, k4, k5, k6, k7, k8, k9	88.89
Torch	k3	11.11

In Table 4, " What is the motto of the Olympic Games?", contains the answers to the question. According to the data in the Table 4; 88.89% of the participants (8 participants) stated that don't have any idea about it and one particapant expressed it as a torch.

Table 5. In which city were the 2014 Winter Olympic Games held?

	f	%
No idea	K4, k7, k8	33,34
Russia	K1, k2	22,22
London	K3, k9	22,22
Moscow	K5	11.11
Erzurum	K6	11.11

In Table 5, " In which city were the 2014 Winter Olympic Games held?", contains the answers to the question. According to the data in the Table 5; 33,34 % of the participants (3 participants) stated that don't have any idea, 22,22 % of the participants (2 participants) says Russia, 22,22 % of the participants (2 participants) says London, one participants says Moscow and one particapant says Erzurum.

Table 6. In which city will the 2016 Summer Olympic Games be held?

	f	%
Rio-Brazil	K1, k2, k5, k9	44,44
Japan	K4	11.11
Tokyo	K6	11.11
No idea	K3, k7, k8	33,33

In Table 6, " In which city will the 2016 Summer Olympic Games be held?", contains the answers to the question. According to the data in the Table 6; 33,33 % of the participants (3 participants) stated that don't have any idea, 44,44 % of the participants (4 participants) says Rio-Brazil, one participants says Tokyo and one particapant says Japan.

Code and Themes for Awareness of Olympic Concepts

The codes and themes that emerged in the research based on the data obtained from the participants' expressions about their "awareness of Olympic concepts" are shown in Figure 1. When Figure.1 is examined, the themes that emerge are; Paralympic, fair-play, olympic education, determined as the aim of the olympics and olympism.

There are codes obtained from evaluations of the Paralympic concept of Olympic awareness. While 5 of the participants expressed the paralympic concept as the Olympics for the disabled, 3 of the participants expressed the paralympic concept as the sport of the disabled. In addition, participant 8 stated that he has no idea about the paralympic concept. When we look at the expressions of the participants regarding the paralympic concept, it is seen that almost all of them have the same findings with the meanings of this concept in the literature. The codes that emerged from the evaluations regarding the fair-play theme of the awareness of the Olympic concepts in the study are as shown in Figure 1. Accordingly, 5 participants expressed the concept of fair play as respect for the opponent, while 3 participants expressed honesty. In addition, 2 participants state the concept of fair play as obeying the rules and helping each other. Likewise, as in the paralympic concept, the participants expressed the concept of fair-play with keywords in accordance with the definition available in the literature.

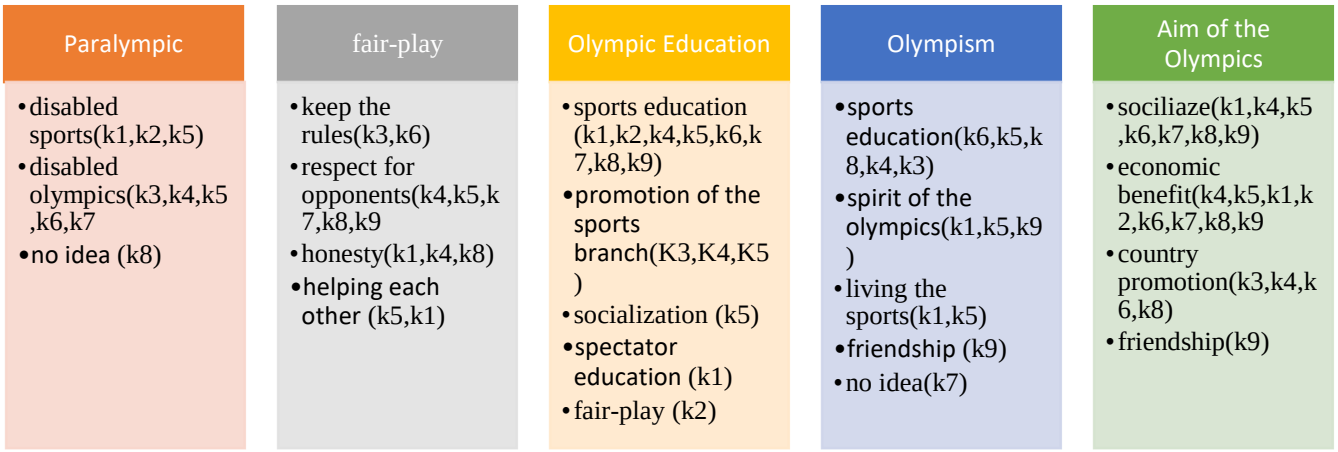

Figure 1. Codes and Themes for Awareness Related to Olympic Concepts

The evaluation of the answers given to the question of what the concept of Olympic education is in order to measure the Olympic awareness is presented in figure 1. Most of the participants are Olympic education; They expressed it as sports education. However, three participants stated that the Olympic education is the promotion of the sports branch. In addition, the participant 1 gave spectator education and participant 2 fair-play meaning to the Olympic education. When the expressions of the participants are examined, they evaluated the Olympic education as education and it is seen that these evaluations are close to the definition in the literature.

When the findings arising from the expressions about what the concept of Olympism is evaluated; While 5 of the participants see Olympism as a sports education, 3 participants see Olympics as the spirit of the Olympics. In addition, 2 participants express this concept as living the sports, while participant 9 associate it as friendship. Participant 7 stated that he has no idea about the concept of olympism. In general, the participants' evaluations of the concept of olympism show that they do not have much interest and knowledge on this subject.

The evaluations of the question of what is the aim of the Olympics, which are asked to understand the awareness of the Olympic concepts in the research, are given in Figure 1. Accordingly, while most of the participants see the aim of the Olympics as social cohesion and economic benefit, 4 participants see it as the promotion of the countries. In addition, participant 9 stated that the purpose of the Olympics is friendship.

DISCUSSION AND CONCLUSION

There are 3 main symbols that give identity to the Olympic movement and Olympic games and are included in the Olympic Treaty. These symbols are the Olympic Motto, the Olympic Torch and the Olympic Rings (21). The Olympic flag, presented to the Paris Congress by Pierre de Coubertin in 1914, was adopted and represented in this flag as five interlocking rings representing the unity of the five continents and the gathering of athletes from all over the world at the Olympic Games (15). It is possible to say that the participants (77.78%) generally know the Olympic flag in this study, which investigated the awareness of national athletes on Olympic concepts.

The Olympic movement emerged, which aims to ensure the education of young people through sports, based on the understanding of "every sport is for every person" by Coubertin, was a part of the "International Peace Movement" and the "International Sports Movement" at the end of 19th century. It is also a concept based on the understanding of Olympism (1). The three main parts of the Olympic Movement are the International Olympic Committee (IOC), the International Sports Federations (IFs) and the National Olympic Committees (NOCs) (15). In the light of these explanations, the participants were asked what is the highest organization of the Olympic movement in the world and in our country. It has been revealed that 77.78% of the participants do not know the IOC, and 44.44% know the Turkish National Olympic Committee In this regard, it can be said that the participants do not know the IOC, which has a place in the Olympic consciousness and therefore in the sports culture and is the highest organization of the Olympic movement in the international arena, although they partially know the NOC of Turkish, which is the highest organization in Turkey. A similar result emerged in a study by Çoknaz et al.(4), entitled Physical education and sports school students' awareness of Olympic subjects and their evaluations of Olympic concepts and in this study, it was determined that 78.93% of physical education and sports high school students did not know IOC and 71.07% did not know NOC of Turkish. It is a situation that needs to be thought about that our national athletes, who have the potential to represent our country in the Olympic games, have insufficient knowledge on these issues as sports culture.

The Olympic slogan expressing the historical aims of the Olympic Movement;"CITIUS, ALTIUS, FORTIUS" (Faster, Higher, Stronger) is included in the Olympic treaty. The Olympic Slogan, which is referred to as the best of an athlete's goal rather than being the first, was a close friend of Coubertin, Priest Didon, inscribed "CITIUS, ALTIUS, FORTIUS" on the club flag of the school where he teaches. Coubertin also adopted this phrase for sports and spread it everywhere (22). Therefore, the Olympic slagon is a concept that every athlete who aims to compete in the Olympic games should know and comprehend. In our research, national athletes were asked what the Olympic Slogan was and it was revealed that 88.89% of the participants did not know this concept. In addition, one participant identified the Olympic Slogan as the torch. It can be said that this concept, which reflects the aim of the Olympic competitions, is important for every athlete who has the chance to compete in the international arena to know as a culture and to live this purpose. For this reason, the fact that every athlete who has reached the level of nationality as a sportsman does not know these concepts as a sports culture can be expressed as a situation that should be discussed in terms of the education of elite athletes in our country.

The Olympic games are held every four years in different cities as summer and winter games. In the study, the participants were asked in which city the Olympic games were held and in which city the Olympic Games will be held in the nearest time. In this direction, it was asked which of the 2014 Winter Olympic Games will be held. It has been revealed that the participants generally have no idea about which city the games are held in. However, two participants stated that the games were held in Russia, although they did not know which city the 2014 winter games were. Therefore, it can be stated that countries are remembered rather than cities. In the study, the participants were asked where the 2014 winter games were held, as well as in which city the 2016 summer games would be held. While 44.44% of the participants answered correctly both as a city and a country with the expressions Rio-Brazil, the city and country where the 2016 summer games will be held, two participants expressed the next 2020 summer games as Japan and Tokyo answers separately. Based on this, it can be said that the Summer games are followed more than the Winter games.

In the later stages of the research, codes and themes related to these codes were created together with the evaluation of expressions about Olympic concepts. Based on participant statements, the themes of paralympic, fair-play, olympic education, olympism and the purpose of the olympics have emerged. It is seen that the participants explained the

Paralympic theme with the expressions disabled sport and disabled Olympics. One participant stated that he did not have any idea. The word Paralympic, which is expressed as the Paralympic Games, is formed from the combination of the words 'para' and 'Olimpic' taken from the Latin alphabet(20). Participants generally associate the concept of paralympic with disabled sports, as expressed in its definition, and express it as disabled sports organization, disabled Olympics.

Today, sport is a way of life and a means of education. It is seen that sports are practiced at different levels by individuals living in society. Among the factors that direct individuals to sports are successful athletes and their earnings, the popularity of the athletes and their recognition all over the world, the fact that the athletes are mediatic, etc. can be listed as (19). In recent years, the concept of fair-play in sports has come to the fore (16). In addition, fair play is the understanding of love, friendship and brotherhood(5). In this study, within the scope of Olympic concepts, the participants expressed the concept of fair-play as obeying the rules, respect for the opponent, honesty and cooperation. Similarly, in another study, fair play was shaped by the themes of respect in sports, friendship in sports, peace in sports, honesty in sports, fair play in sports, obeying the rules in sports, and ethics and morality in sports (4).

As a tool for promoting Olympism, the Olympic education programs guide the global understanding in building the basic principles of the Olympic understanding on different cultures and social groups. Olympic Education is a learning process in teaching this understanding; participants are encouraged to gain knowledge, to understand, try and spread the Olympic principles. This learning process is based on deep educational knowledge and cultural principles of Olympic understanding. At the same time, the process lends the spirit of sportsmanship and enables the Olympic Games athletes to create a model for young people to follow in their lives (8). The purpose of Olympic education is not only to appeal to young people who have the potential to become world-class Olympic athletes, but also to provide an opportunity for those who want to do their best. In addition, it is to teach young people the principles of the Olympics such as honesty, discipline, courage, determination, sportsmanship, self-direction, fitness and moral values. More importantly, it is to enable all people to accept and better understand themselves, the society and the world they live in (9). In this context, to the participants in the research, what is the Olympic education? has been asked. The participants tried to explain the Olympic education with the concepts of sports education, sports branch promotion, socialization, audience education and fair-play. It can be stated that although the participants associate the Olympic education with the concept of education, they still have a lack of knowledge on this subject. At this point, the personal interests of elite athletes are as important as the education they will receive in educational institutions. A similar statement was revealed in the study conducted by Pehlivan (18) that the participants in the study had their own personal interests as the primary reason for their awareness of Olympic concepts and their efforts to spread Olympism. In this direction, it is seen that both the use of training and their own personal interests are one of the main factors in changing the behavior of athletes to understand the world and each other.

The Olympic Charter is a systematic compilation of fundamental principles, rules and practice texts adopted by the International Olympic Committee (IOC). The two items in the Olympic Charter regarding Olympism are as follows; a) Olympism is a philosophy of life: it elevates and balances the unique qualities of body, will and mind. The aim of Olympism is to create a life style based on happiness by combining sports with culture and education, the educational value of good examples and respect for universal basic moral principles. b) The aim of Olympism is to ensure that sport serves harmonious human development everywhere, thereby playing an encouraging role in the creation of a peaceful society that meticulously protects human dignity (22). In addition to the olympic charter definitions, many writers regarding and Olympians have made different definitions about this concept until today. In this research, the participants used concepts such as sports education, Olympic spirit, living sports and friendship while explaining Olympism. It is possible to say that the participants in the study had difficulty in making a clear statement about Olympism. A similar result emerged in the study conducted by Atalay (1). In the related research, the participants stated that the meaning of Olympism was not known exactly and it was confused with the Olympic Games. Erdemli (7), in explaining the Olympics, stated that even people who think they are authority in sports are limited to very superficial explanations.

The power of sport is recognized by all countries at international level. Sport is the common language of societies. While the international sports organizations that are organized primarily ensure the

recognition and development of new sports branches and all branches of sports; the integration of societies, the formation of common cultural values; It enables many nations to show themselves, exhibit their cultural characteristics and make their existence accepted. This situation causes sports organizations to become the center of attention of all societies today (13). The modern Olympic Games are seen as an "image race" in which the host countries and cities attempt to be "better" and "different" from the previous ones, as well as the sporting achievements of the players. The basis of this conflict between countries is the opportunity to promote cities around the world through sports events and media, as well as sporting events. With the understanding that there is a serious income and development opportunity for the cities hosting the Games, the Olympics has moved to a different stage where many political, cultural, scientific and economic factors are used together. The biggest factor in this matter is; The budget allocated for the preparations of the organization will make a significant contribution to meeting the needs of a city such as infrastructure, transportation, open space, new building that may be completed in 50 years, and to have a development plan to be prepared to increase the social, economic and environmental value of the city (5). In particular, countries are in a race to host the Olympic Games, which are the largest sports organizations in the world. Because the city that hosts the Olympic games, and therefore the country, provide a lot of added value, such as economic promotion, cultural interaction, tourism, etc. Finally, the participants were asked what the purpose of the Olympic games was. Participants tried to express the purpose of the Olympic games as cohesion, economic benefit, country promotion and friendship. When these expressions are evaluated, it can be said that each of them are situations that occur during the Olympic games.

As a result, it was seen that the general knowledge level of the national athletes participating in the study about the olympic movement was not at the level expected from elite athletes. In addition to the elite performance training given to national athletes, the necessity of providing training for sports and Olympic awareness has emerged At this point, it can be suggested that stakeholder organizations, together with the Turkish National Olympic Committee, should work to increase Olympic awareness. In order to raise awareness of elite athletes at the national athlete level, trainings on Olympic subjects should be given by the Federations they are affiliated with. In addition, it is recommended that institutions providing sports science education make necessary arrangements in the course content of Olympic education. However, all other relevant institutions and organizations should make an effort in this regard. Because, as a country that has expressed to host the Olympic Games in every medium, all relevant institutions and organizations must do their part in the creation of Olympic awareness.

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Social Reflections of the Employment of Recreation Specialists in Turkey

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Abstract

Recreation specialists are crucial when helping to disseminate recreation to both the needs of the individual and the society. The aim of this study is to examine the increase in employment rates of recreation specialists in Turkey, looking specifically at the economic, social, and psychological dimensions. This research is structured using qualitative research methods and techniques and is designed as theoretical analytical research. A document analysis approach was used when collecting qualitative data, while a descriptive analysis approach was used in the solution of the data. In addition, a reflection on where the research was conducted was discussed within the scope of a potential increase in employment of recreation specialists and the impact it would have on the economic, social, and psychological dimensions of Turkey.

Key Words: Economics, Employment, Recreation, Recreation Specialist, Society.

Türkiye'de Rekreasyon Uzmanları İstihdamının Toplumsal Yansımaları

Özet

Rekreasyon, bireysel ve toplumsal ihtiyaçların karşılanmasında değer bulmuş bir kavramdır. Rekreasyon uzmanı ise bu değerin vücut bulmuş halidir. Dolayısıyla toplumun rekreasyon uzmanlarına, rekreasyon uzmanlarının ise istihdam artışına ihtiyacı ortadadır. Bu çalışmanın amacı; rekreasyon uzmanlarının istihdamının arttırılması durumunu; toplum bazında ekonomik, sosyal ve psikolojik boyutlarıyla incelemek ve bu alt boyutların toplumsal yansımalarını ele almaktır. Bu araştırma nitel araştırma yöntem ve teknikleri kullanılarak yapılandırılmış ve kuramsal analitik araştırma olarak desenlenmiştir. Çalışmada nitel veri toplama yöntemlerinden doküman incelemesi kullanılmış ve verilerin çözümünde ise betimsel analiz yaklaşımı esas alınmıştır. Araştırma amaçları doğrultusunda, rekreasyon uzmanlarının istihdamının artması dahilinde toplumun ekonomik, sosyal ve psikolojik çıktılarının ve toplum açısından olumlu dönütlerinin neler olabileceği ele alınmıştır.

Anahtar kelimeler: Ekonomi, İstihdam, Rekreasyon, Rekreasyon Uzmanı ,Toplum.

INTRODUCTION

The word recreation is derived from the Latin word recreare, which means re-creation or refreshing. In the years that followed, it was expressed in various dictionaries as "reviving spiritual power or spirit, rebirth". In fact, recreation corresponds to experience of regeneration, escape from daily routine, revival, and change (15). Recreation is all about the needs of the people, it can give them a sense of freedom, the needs to gain success, to prove themselves, to express their personality, to be appreciated, to gain social status, and to gain new experiences (17). In addition, recreational activities can positively affect the individual, their relationships, and socio-cultural adaptation, by enabling the individual to get rid of many difficulties in life and to improve themself (33). The first examples of the recreation movement were in the United States of America in the middle of the 19th century. This was initiated by the state to provide desirable social outcomes (29). Since the recreation movement become a state policy, pressure was put on relevant institutions to invest in leisure time resources, such as, parks and recreation areas, and to increase scientific studies on the outcomes of recreation on the individual (23).

When looking at the historical process of recreation in Turkey, it was found that Turkey planned to increase the worldwide importance of recreation. To provide public attention, the Sixth Five-Year Development Plan (1990-1994), purposed that recreation education be mentioned under the title of principles and policies as follows: "A department of recreation will be opened in the physical education and sports schools of universities in order to train qualified personnel to carry out educational and organizational activities in the use of leisure time" (27). In 1996 recreation was evaluated within the scope of the Seventh Five-Year Development Plan (1996-2000) and it was decided that recreation departments at universities needed to be open to provide the manpower needed for the effective use of free time, to educate the personnel who will give trainings, and to conduct recreation organizations (28).

Recreation and leisure are some of the biggest and fastest growing industries in the world. When we consider the development process of recreation in Turkey, we can see that educational recreation departments were first opened at the School of Physical Education and Sports. Then in 2010, Gazi University was approved to establish the Department of Management of Recreation within the Faculty of Tourism. Today, Turkish universities have a total of 76 recreation departments, 65 of which are State and 11 are Foundation (14), many students have graduated from recreation departments within the Faculty of Sports Sciences, Schools of Physical Education and Sports, and Schools of Science and Technology within the scope of education. With the number of programs and graduates many are finding it hard to get employed as a recreation specialist.

The scope of employment is quite wide, but at its core "employment, which means putting into service, using it in service" can be defined simply as "employing people and their being accepted to work" (35). However, employment policies, refers to the planning of practices aimed at solving the problems caused by the imbalance arising from the supply and demand of the labor force, by maintaining the growth and ensuring stability in an economy. Increasing the level of welfare by ensuring economic growth and stability, ensuring justice in income distribution and equal opportunities within the society, using the factors of production effectively, combating problems caused by unemployment because of poverty and deprivation, and making it possible for individuals to live their lives in a way that suits human dignity, involves rules and procedures (8). At this point in time, one of the most fundamental duties of states is to protect their citizens from the negativity of unemployment while using their political authority to create employment opportunities. For this reason, before examining the employment policies, it is thought to be useful to examine the dimensions of unemployment caused by the state policies, and the dimensions of unemployment in national and international terms today (18).

According to the October 2019 Labor Force Statistics, of the Statistical Institute of Turkey; the number of employed people throughout Turkey during October 2019 decreased by five hundred twenty-seven thousand persons compared to the same period of the previous year and became 28.343 million people. This means that the employment rate became 45.9% with a 1.6 percentage point decrease. As of 2020, we have nine hundred twenty-eight thousand unemployed university graduates, and nine hundred forty-seven thousand university graduates who do not even look for employment, as

they know there is no hope. This means that the total number of university graduates, as of 2020, is reported as one million, eight hundred seventy-five thousand (31). Üni-Veri is a national study that reveals the employment rates of the universities in Turkey based on departments, the rate of employment, and employment in the public sector in the first year, average wages, and sectorial distribution of employment and qualification mismatch. According to the Üni-veri 2019 data of the Presidential Human Resources Office of the Republic of Turkey; percentage rates of employment in sports sciences are as follows: on sectorial basis; education (31.1%), other service activities (15.0%), culture, arts, entertainment, recreation, and sports (12.5%), administrative support and service activities (8.0%), other (33.4%). Within the distribution ratios specified on a sectorial basis, it is important for the recreation department graduates to be employed in the sectors suitable to their education and training fields in terms of individual, social and industrial aspects. Article 49 of the Constitution of Turkey states that,

> "Work is everyone's right and duty" … "The state takes the necessary measures to increase the life level of the employees, to protect the employees and the unemployed, to support working, to create an economic environment conducive to prevent unemployment and to ensure work peace."

Therefore, while working is one of the social rights of individuals, protecting the unemployed and preventing unemployment are among the duties of the state (1). In other words, the education provided in the recreation-related departments of the universities should not be considered only within the scope of students. Every individual who graduates with the identity of recreation specialist must be knowledgeable about how to provide qualified leisure time, as well as be able to play an important role in maximizing the quality of life of other individuals within society. From this point of view, supporting the state is also inevitable, as they can help provide employment for recreation specialists, which in terms would increase the welfare and the qualified leisure time of the individuals in the society. On the other hand, failure to provide employment can cause social, economic, and psychological problems in all social dimensions as well as individual effects. Lack of necessary income in the economic dimension can cause individuals to lose their sense of economic confidence. Moreover, individuals in the society may psychologically face negative factors such as unhappiness, anxiety, and depression.

The aim of this study is to examine how an increase in employment of individuals who graduate from recreation departments of universities in Turkey fits within the economic, social, and psychological dimensions on the social basis, and to consider the social reflections of these sub-dimensions.

Methods

In terms of the methods used, Creswell (9) expresses qualitative research, as a process of interpretation by questioning social life and human-related problems with unique methods. The research conducted in this study is structured using qualitative research methods, as well as, techniques and patterns, such as, theoretical analytical research. Theoretical analytical research is defined as a research pattern for determining and analyzing the current situation. In this context, with a qualitative approach, one can focus on the answer of "What is it?" to explain the historical and social development. Accordingly, answers are sought for questions such as "what is the situation?" (11). In this study particular study, document analysis was one of the qualitative data collection methods. It was used in accordance with qualitative research to reach the analytical analysis. In addition, document review was also used as document review is the analysis of written and visual materials containing information about the phenomena aimed to be investigated (37). Books, articles, statistics, theses, and pictures are among the first documents that help in providing information about the subject being researched (4, 5).

The data collection phase covered three months and consisted of corresponding with relevant institutions to obtain necessary information, examining the statistical data located on the institution's websites, and combing through written articles and books. In this study, a descriptive analysis approach was taken as basis for presenting the findings. Descriptive analysis is the presentation of data with a descriptive approach by making direct quotations from what people say, write, and the contents of the documents, by adhering to the original forms of the data used in the qualitative analysis (21).

Recreation specialists who have graduated from university recreation departments could be employed in the public sector, private sector, or take part in voluntary work. Since employment status and the framework for suitable employment is based on a sectorial basis, in accordance with the Constitution of the Republic of Turkey, this study is limited to the public sector. By being limited to the public sector the study can focus on the responsibility that the state has on creating suitable environments to prevent unemployment.

Findings

Although employment and unemployment are two different concepts, they can be linked as different sides of a coin that looks at the individual as a common denominator, and in which individuals endure, influence and are affected (36). In this context, the issue of employment, should not only be considered individually, but should be also considered as an issue that concerns the public. In this section, in line with the research purposes, the economic, social, and psychological outcomes of the society and the positive feedbacks for the society are discussed within the scope of the employment of recreation specialists.

Economic consequences

Recreation can have a large effect on the economic landscape of a society. For instance, offering investment opportunities in private and public spheres, encouraging a reduction in general health expenditures by participating in regular recreation and sports activities, and creating new job opportunities contribute to economic growth and development (10). Political steps also add a different dimension to the issue when we think of society-oriented economic growth. For example, the Tenth Development Plan (2014-2018) is aimed at achieving a higher education system that is sensitive to the needs of the society and the economy, how it interacts with its stakeholders, and how the production information transforms into product, technology, and service. Thus, the Tenth Development Plan has decided that their main objective is to create a labor market where decent work opportunities are offered to all segments of the society, and the quality of the workforce is increased and used effectively (25). Nevertheless, when evaluating and analyzing the Üni-veri (2014-2018), graduate information, obtained from the Higher Education Institutions and the employment data from the Social Security Institution, the rate of employment in the public sector of graduates of sports sciences is stated as 9%. Comparing this percentage to the amount of state universities within Turkey, the low rate of employment in the public sector of graduates of sports sciences is a red flag that employment is not being provided. However, within the framework of an effective labor market, and economic feedback of the society can be provided to help increase employment rates in the relevant field.

In Turkey, recreation department graduates can find jobs at universities, Youth and Sports Provincial Directorates, within the tourism sector (animation, water sports, recreational activities, etc.), in the social-cultural and healthy life recreational activities, within public and private organizations, local government agencies, and at federations and sports clubs in the field of coaching and coordination (20). When looking at the employment rate of recreation specialists who have received an education from a university with a recreation department, one can see that these individuals should be able to move to a stage where they transform their knowledge into production. According to Levine (22) when the economy operates in full employment conditions, the growth rate of potential output shows an improvement depending on the potential productivity and the growth rate of the labor supply. Thus, the importance of increasing the needs of employment will directly affect the economic growth within the society. When evaluating these needs from an administrative point of view, we can determine that political authority plays an important role in ensuring and developing the societal participation in recreation. The political authority also has certain responsibilities, such as, providing investments that will allow the use of leisure time, distributing recreational activities to the society, and taking economic and social measures that will facilitate the societies participation in leisure activities (16). The common denominator in all of this, is to increase the employment rate of recreation specialists, as they are qualified to perform these crucial functions.

Social consequences

Recreation contributes positively to the social structure of a society as it provides cooperation, helps develop team spirit, allows the society to understand each other, social connectivity, increases the quality of social life, and ensures the inclusion of all age groups within the social structure (10). Economic and social development within a society primarily focuses on the goals of achieving inclusive growth,

raising living standards, increasing sustainable employment, creating quality jobs, and promoting economic and social progress. Therefore, today's development approach considers not only the improvements in economic indicators, but also the advancements in the level of social development (26). Universities are among the institutions that are highly ranked in adding a different dimension to social development.

Universities can take on different forms and tasks when it comes to being a center with specific production factors. Such factors are, a mentally and physically forming environment, an intellectual field enlightening and directing the society, contributing scientifically to the development of underdeveloped regions, educating students with a scientific mindset for universities and high schools, and fostering critical thinking (6). If we consider these requirements when looking at recreation departments, we must first specify the number of recreation specialists who have graduated from specific recreation departments. This data set will be the primary support of the study.

On April 12, 2000, a meeting took place of the Higher Education Institution at Muğla University, School of Physical Education and Sports. It was there that it was decided that a recreation department within the school would be opened in accordance with Articles 7 / d-2, 7/4 of Law No. 2547 amended by Law No. 2880. During the 2000-2001 academic year, the department opened its doors to 30 students (39), since the initial inception an evaluation has taken place over a seven-year period. This evaluation was based on the number of recreation specialist who graduated from the department, with data being stored in the Higher Education Information Management System (13) from the 2012-2013 academic year until the 2018-2019 academic year, see Table 1.

Table 1. Recreation Specialist Graduation Data Based on Academic Year*

Academic Year	Number of Students Graduated
2012-2013	435
2013-2014	649
2014-2015	632
2015-2016	743
2016-2017	721
2017-2018	963
2018-2019	1123
TOTAL	5321

*Data set is from the Higher Education Information Management System (13)

When looking at the increase of graduates on a yearly basis, it is expected that the rise is a direct proportion to the employment rate, since each employed recreation specialist is an important building block in creating equal conditions and contributing to social development. According to Tezcan (30) for many people, participating in leisure activities increases their social status. If we take this approach but look at it from a different perspective, we can say that individuals who can express themselves better through recreational activities contribute to social solidarity and integration because of their ability to participate in recreational activities under equal conditions, even if they have different personalities. The fact that individual and social benefits are so intertwined emphasizes why recreation and recreation specialists play a large role in the social dimension.

Psychological consequences

In addition to industrialization, there have been changes in human relations brought on by competition for employment opportunities, employment problems, and job placement concerns. One issue that many people experience when it comes to these factors is loneliness. This tends to be brought on by the decrease in the amount of time that individuals devote to themselves and to their socialization needs. Loneliness can be defined as the lack of satisfactory interpersonal relationships and has been cited as one of the bases of psychological problems (12). In addition to providing the environment and experiences needed for the development of psychological and emotional health,

recreation also provides a psychological effect with its social and physical benefits (2). Due to this, it should be noted that increasing the employment rates of recreation specialists would provide positive outcomes regarding psychological benefits. As not only would the individual perspective change, but the effects would produce a more well-rounded social service. Therefore, it is expected that this need regarding human resources will increase and employment areas should expand. Steps on how this expansion might take place can be found in the following paragraph.

In the Special Expertise Commission Report, it is stated that "local administrations should be enabled to establish a recreation directorate". While in the Tenth Development Plan (2014-2018), creating programs to improve the mental health of individuals and improving the quality and quantity of community-based mental health centers are mentioned. The Ministry of Youth and Sports is within the scope of responsible institutions and organizations, in terms of developing mental health services (25). Employment of recreation specialists in relevant institutions and organizations is important as it can directly impact the mental well-being of individuals who constitute the society. The implementation of this approach is also an important step when protecting the mental health of individuals in the society. According to Yurcu (38) when recreation activities are consciously selected and carried out, it is possible to improve individuals physiologically, to ensure their intellectual development, to improve their social relations, to improve their mood and to increase their happiness level.

When looking at the results of the Turkish Statistical Institute (TSI) "Life Satisfaction Survey" for 2018 the proportion of happy people among the citizens of our country decreased from 58 percent to 53.4 percent, and the rate of individuals who stated that they were unhappy increased from 11.1 percent to 12.1 percent. It is observed that the happiness rate, which was 53.6 percent in 2017 for men, decreased to 49.6 percent in 2018 and from 62.4 percent to 57 percent in women (32). It is possible to prevent negative emotions of individuals within the society by promoting and running recreational activities. For this study, conscious selection of recreational activities is a basic element for choosing the most appropriate recreational activity for individuals. When creating awareness throughout the society, it is necessary to increase the employment rate of recreation specialists, as they trained to make recreational activities a life-style choice all Turkish citizens.

Conclusion

Recreation is a concept that consists of economic, social, and psychological dimensions, while exhibiting social gains. When it comes to economic gain, the income belonging to the individual comes to mind first, while social gains are perhaps ignored or not considered very important. However, increasing the welfare of the society is the most important gain of a country. Recreation specialists are a leading factor regarding establishing positive effects of a recreation-society combination. For the benefits of recreation specialists to be put into practice, we need the state, the right policies in place, and the importance of recreation to be completely understood within society. One of the most crucial steps to making this happen is to create new opportunities that will in turn increase the employment rates of recreation specialists in relevant public institutions. Recreation professionals can find employment opportunities in public, private and voluntary organizations such as Youth and Sports Provincial Directorates, tourism sectors, universities, federations, and sports clubs.

The impact on economic investments that are achieved by increasing employment rates and opportunities have a large effect on the earnings of the individual, the society, and the state. Thus, the issue of employment needs to be evaluated as it is an underlined issue when it comes to economic gain. When looking at the amount of qualified people in the field of recreation, one could argue that there is a direct correlation between employment in recreation and the economic growth and stability levels of welfare within the country. According to Kayhalak (19) the degree of possibilities a community has or develops can play a central role in bettering the future of the economy. This fact could cause industries to be interested in recreation and leisure services as an economic investment.

The integration of leisure and recreation services, with a concentration on daily commercial participation, enables the creation of new businesses and employment. Recreation is considered a necessity for a society because of its constructive and positive features. The need for recreation and their corresponding facilities creates a need where the results are generated by industrialization and urbanization (24). Today, certain values and

approaches have shifted within urbanization and have had a negative effect on the socialization level of individuals within the society. Therefore, while talking about the concept of recreation, it is necessary to emphasize its effects on socialization. Bucher and Bucher (7) emphasize that socialization, in relation to recreation, can be defined as getting rid of the boredom of daily life and gaining a social personality by interacting with other people through participating in social, cultural and sports activities that are suitable and enjoyable for the person (34).

In addition, recreation practices make the individual, who is a social entity, at peace with oneself, whose inner world is happy, productive, and extrovert. In this way, the individual involved in every stage of social life increases their productivity and happiness without being stuck between narrow patterns (3). Happy individuals tend to have a positive impact on social welfare at the point of solidarity and integration. Regardless of whether it is handled individually or evaluated in terms of social benefits, the importance of recreation has a significant place in providing socialization. Recreation specialists are responsible for making individuals understand the importance of a healthy relationship with recreation. However, this responsibility is an element that should be evaluated as a top priority to protect the field of recreation. This will ensure that the required fields of application are increased. At this point in time, necessary steps should be taken by management to increase the employment rate of recreation specialists. By increasing the employment rates of recreation specialists, the quality of social relations of individuals will rise and the foundations of a healthier society will be brought forth by social formations. These formations consist of a society that contributes to the creation of a healthy cultural structure in the social dimension, while also, taking into consideration the socialization of everyone within the society.

In addition to the economic and socialite outputs of recreation, the dimension of psychological development also has an impact on the society. For this reason, it is necessary to formulate policies to ensure all individuals' psychological moods are considered. To do so political authorities should primarily focus on how individuals are benefiting from society and how it relates to their mood. For this to occur, a public perspective is needed. In the Tenth Development Plan, which is also included in this study, it is thought that the development of community-based mental health services is the responsibility of the Ministry of Youth and Sports, and that every individual in the society should receive equal service. However, through this study, it has been determined that increasing the employment of recreation specialists in relevant public institutions and organizations will help to meet the psychological need of the society.

When looking at all dimensions within the society, this study has concluded that recreation is a key point in meeting the needs of the individual as well as the society. It also plays a crucial part in contributing positively to social, economic, and psychological aspects. When determining who can help the most in all areas, recreation specialists stand out as they can take their training and turn it into a concept worth investing in. However, for this to take place, the employment rate of recreation specialists must increase. Once they increase, the rise of recreational activities that follows will affect the social feedback in a positive manner. Perhaps the most important thing one can gain from this study is that by increasing the employment rates of recreation specialists in Turkey, one can then offer services that can be appreciated by the society, and ultimately provide awareness on the benefits of recreation.

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Examining the Relationship Between Dynamic Balance Skill and Reactive Agility Performance in Karate Athletes

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Abstract

The aim of this study is to examine the relationship between dynamic balance ability and reactive agility performance in karate athletes. A total of 53 karate athletes, 19 females (35.8%) 34 males (64.2%), (mean age: 18.02 ± 1.60 years, mean height 172.13 ± 7.59 cm; mean body weight 64.83 ± 9.75 kg) were included. Dynamic balance ability was tested in three directions: anterior, posterolateral and posteromedial using the "Y Balance Test" platform. Reactive agility performance was evaluated in a SpeedCourt ™ system in a closed space. Pearson or Spearman correlation analysis was used according to the distribution status to examine the relationship between the variables. Statistical error level was determined as $p<0.05$. It was determined that there was a positively weak and moderate correlation between the dynamic balance ability of the athletes and their reactive agility performance ($r = 0.273 / 0.565$, $p <0.05$). As a result of our study, it was determined that karate athletes with good dynamic balance ability had good agility performance. Having good dynamic balance skill indicates that the athlete has less postural oscillation and more stabilization. We think that this situation will contribute to better reactive agility activities that require constant change of direction. As a result of our study, it is recommended to consider dynamic balance elements in improving reactive agility performance in karate athletes.

Key Words: Speedcourt, Sport, Y Balance.

Karate Sporcularında Dinamik Denge Becerisi ile Reaktif Çeviklik Performansı Arasındaki İlişkinin İncelenmesi

Özet

Bu çalışmanın amacı karate sporcularında dinamik denge becerisi ile reaktif çeviklik performansı arasındaki ilişkiyi incelemektir. Çalışmaya 19'u kadın (%35,8) 34'ü erkek (%64,2), toplam 53 karate sporcusu (yaş ortalaması: 18,02±1,60 yıl; boy uzunluğu ortalaması 172,13±7,59 cm; vücut ağırlığı ortalaması 64,83±9,75 kg) dâhil edildi. Dinamik denge becerisi "Y Balance Test" platformu kullanılarak anterior, posterolateral ve posteromedial olmak üzere üç yönde test edildi. Reaktif çeviklik performansı kapalı bir alanda SpeedCourt ™ sisteminde değerlendirildi. Değişkenler arasındaki ilişkiyi incelemek amacıyla dağılım durumuna göre Pearson veya Spearman korelasyon analizi kullanıldı. İstatistiksel hata düzeyi $p<0,05$ olarak belirlendi. Sporcuların dinamik denge becerisi ile reaktif çeviklik performansı arasında pozitif yönde zayıf ve orta derecede ilişki olduğu belirlendi ($r=0,273 / 0,565$, $p<0.05$). Çalışmamız sonucunda dinamik denge becerisi iyi olan karate sporcularının çeviklik performansının iyi olduğu belirlendi. Dinamik denge becerisinin iyi olması sporcunun postüral salınımın daha az, stabilizasyonunun ise daha fazla olduğunu göstermektedir. Bu durumun sürekli yön değiştirmeyi gerektiren reaktif çeviklik aktivitelerinin daha iyi olmasına katkı sağlayacağını düşünmekteyiz. Çalışmamız sonucunda karate sporcularında reaktif çeviklik performansının geliştirilmesinde dinamik denge unsurlarının dikkate alınması önerilir.

Anahtar kelimeler: Speedcourt, Spor, Y Dengesi.

INTRODUCTION

Kinesiologically, balance is defined as the body's ability to withstand internal and external forces without impairing body integrity (27). In sports sciences, balance is defined as a skill that a movement performs in harmony with the central nervous system and musculoskeletal system (13). Balance, which includes many neurological pathways and aims to keep the body posture by working together with all body systems, is divided into two as static and dynamic balance (8,12). Static balance is defined as maintaining or continuing balance in a less mobile or inactive environment, while dynamic balance is defined as maintaining or continuing balance during movement or on moving ground (8,12).

Balance is important not only in daily life activities, but in almost all sports (29). Static balance plays an important role in the performance of shooting and archery, while dynamic balance plays an important role in the performance of freestyle sports such as snowboarding, skateboarding, windsurfing or aerobatic cycling (29). In sports branches such as karate, tai-chi, yoga, ballet or gymnastics, the aim is to control the balance in sports-specific positions that degree of difficulty can be varied depending on the expertise (29).

Agility, defined as the ability to change direction quickly while maintaining balance and without losing speed, is an important component of sports performance (11, 28). During agility performance, it is very important to remain in balance during rapid changes in direction to make the desired movement (4). Agility is defined as planned agility (closed skill agility, direction change speed) and unplanned agility (reactive agility, open skill agility) (10, 20). Planned agility enables athletes to perform better than their competitors in situations where they can predefine their movement pattern (18, 25). Reactive agility, on the other hand, is the response of athletes to external stimuli by using whole body movements such as speed and direction change (22). Planned and reactive agility are considered to be independent of each other (22). Sekulic et al. (2017) stated that there is a low correlation between planned and reactive agility tests and therefore planned and studies on reactive agility should be evaluated separately (20).

Ağaoğlu et al. (2017) stated in their study that there is a significant relationship between dynamic and static balance skill and agility performance in athletes (2). Altınkök et al. (2012) found a significant relationship between static and dynamic balance and agility performance in their studies with 10-year-old tennis athletes (3). Again, Miller et al. (2006) suggested that improved balance and postural control are associated with improved agility performance (16). Studies in the literature generally examined the relationship between balance skill and planned agility (2, 3, 16). And It is noticeable that the studies between dynamic balance ability and reactive agility in athletes are limited. Hovewer, There have been no studies examining the relationship between dynamic balance ability and speedcourt reactive agility performance in karate athletes. Therefore, the aim of this study is to examine the relationship between dynamic balance skill and reactive agility performance in karate athletes.

MATERIALS AND METHODS

A total of 53 karate athletes, 19 women (35.8%) 34 men (64.2%) with mean age 18.02 ± 1.60 years, mean height 172.13 ± 7.59 cm; mean body weight of 64.83 ± 9.75 kg, were included in the study. Inclusion criteria in the study; not having upper and lower extremity injuries, being a licensed athlete in the field and volunteering to participate in the study. Athletes who met the study criteria were measured within two days. After receiving the demographic information of the athletes on the first day, dynamic balance skill measurements were made. On the second day, reactive agility performance measurements were made. Athletes were informed about the study before measurements and signed a consent form. In order to conduct the study, the date / numbered decision ethics committee approval was obtained from the Ankara Yıldırım Beyazıt University Ethics committee (number: 2021/44).

Evaluation of Dynamic Balance Skill

The "Y Balance Test" platform was used to evaluate the dynamic balance skill. Measurements were made with bare feet and in comfortable clothing. Measurements were made in 3 directions for each foot, namely anterior (anterior-ANT), posterior-outer side (posterolateral-PL) and

posterior-inner side (posteromedial-PM). The distance between the farthest point where the athlete could reach from the tip of the toe in the center in ANT reach, and the distance between the farthest point where the athlete could reach from the heel in the center in PL and PM reach were measured. Before measurements, each athlete was given a test trial, and after the trial was completed, each athlete was given a 2-minute rest period. Then the test protocol was carried out by making 3 stretches in each direction. All reachs were recorded in centimeters, and three measurements were averaged for evaluation. During the measurement, the condition that athletes transfer their body weight to the lying foot, separate the heel of the posture foot from the floor, or touching the tip of the toe on the ground was considered an error, and the measurement was repeated after the athlete was verbally warned and informed. After the measurements were completed, the mean of the sum of the three measurements extended in the ANT, PL and PM direction was used in calculating the combined balance score. Combined balance score calculation was done to eliminate the leg length advantage (19).

The combined balance score was calculated separately for the right and left legs of each athlete using the formula ANT reach + PL reach + PM reach / (Leg length × 100). A high combined balance score is interpreted as a good dynamic balance of the athlete (19).

Evaluation of Leg Length

Each athlete's leg length was measured bilaterally in the supine lying position with a tape measure, and the measurements were recorded in cm. The distance between the spina iliaca anterior superior point on the same side and the medial malleolus was measured as leg length.

Evaluation of Reactive Agility Performance

All tests were performed in a closed area on the SpeedCourt ™ system (Globalspeed GmbH, Hemsbach, Germany). The Speedcourt ™ system has been developed to improve and evaluate the speed of change of direction and agility, and it has been proven to be useful, valid and reliable in determining versatile direction changing movements (6).

Speedcourt system; It consists of a screen, a square area (6.20 x 6.20 m) with 10 pressure sensors and a computer. Pressure sensors are arranged in 50 x 50 cm squares in the field. The entire area and 10 pressure sensors are shown on the screen. Each of the pressure sensor detects a minimum force of 150 N and detects contact times in milliseconds. The test starts with the countdown and a random one of the square areas (pressure sensor) turns white on the screen. The athletes must run towards the square with a white light on the screen and touch the floor with one of their feet. Athletes must watch the screen and follow the white square area, both running on the field and touching the appropriate square area. As soon as the athlete touches a square, another square turns white. And in the meantime the athlete has to touch the other square as soon as possible. The test ends after the ten squares turn white and the athlete touches these 10 squares. Before the test, all athletes were provided with dynamic warm-up for 10 minutes, then passive rest for three minutes. Two measurements were taken from each athlete and the good result was recorded. After the test; the test time, mean turn time, mean left-turn time, and mean right-turn time were recorded in seconds. The shortness of the test time, mean turn time and mean right-left turn time are interpreted as being good of the athlete's agility performance.

Statistical Analysis

The statistics of the study were made using the SPSS 20.0 package program. The definition of whether the variables are normally distributed or not was analyzed using the analytical method (Kolomogrov-Smirnov). It was determined that the PL right-left difference value from the Y balance dynamic balance test values and the mean turn time and the right-left difference% value from the Speedcourt reactive agility test values did not comply with the normal distribution, while the other data showed a normal distribution. In order to examine the relationship between variables; Pearson correlation analysis was used for numerical variables with normal distribution and Spearman correlation analysis was used for variables that did not show at least one normal distribution. Statistical error level was set as $p < 0.05$.

RESULTS

The physical characteristics of 53 karate athletes, 19 female (35.8%) and 34 male (64.2%) included in the study, and descriptive information about the Y balance dynamic balance test and Speedcourt reactive agility test are given in Table 1.

When the relationship between the athletes' Y balance dynamic balance test and Speedcourt reactive agility test was examined, It was determined that there was a weak and moderate positive correlation between the athletes' dynamic balance ability and reactive agility performance ($r = 0.273 / 0.565$, $p < 0.05$) (Table 2).

DISCUSSION

As a result of our study we conducted to examine the relationship between dynamic balance skill and reactive agility performance in karate athletes, it was determined that the agility performance of karate athletes with good dynamic balance skill was good.

Balance ability and agility performance depend on the timing of skeletal muscles and the ability to coordinate the impact force correctly (1, 15). The fact that both balance skill and agility performance are related to the same parameters constitutes the infrastructure of the expected relationship between balance skill and agility performance (1, 15).

There is a variety of information about the relationship between agility performance and balance ability (7, 9). Erdem et al (2015) reported that there is no significant relationship between balance and agility in adult football players (7). Erkmen et al (2010) reported that sprint acceleration performance is not related to balance skill (9). Sibenaller et al. (2017) suggested that there is no significant relationship between the static and dynamic balance measurements of healthy high school athletes and their agility performance (23). In contrast, Sekulic et al (2013) found that balance ability in women is not associated with agility performance, but is significantly associated with men (21). In our study, we did not evaluate the relationship between balance and agility performance on a gender basis. But in our study, in which both sexes were evaluated together, we found that there is a relationship between dynamic balance and reactive agility, and as dynamic balance skill increases, reactive agility performance increases. Similar to our study, Okudur and Sanioglu (2012) reported that there is a relationship between balance scores and agility performances in 12-year-old tennis athletes, and that agility performance also increases as balance skill increases (17). In the study of Bloomfield et al. (2007) evaluating dynamic balance skill with Bass test and agility performance with T test, it was determined that there was a relationship between dynamic balance skill and agility performance, and as dynamic balance skill increased, agility performance increased in parallel to this (7). In another study conducted on young soccer players, it was stated that the decrease in agility performance, which requires high-intensity sprint performance, may be due to a decrease in balance performance (14). The results of our study have parallels with this information that exists in the literature.

There are also studies in the literature examining the effects of balance training on agility (24,26). In the Sporis et al. (2010) study which they aimed to investigate the effect of the balance and coordination exercises on improving agility, stated that football players could move quicker and faster in sudden changes of direction, and some of the goals of agility training are the development of speed, coordination, strength and balance (26). In another study, it was observed that balance training improved agility performance (24). This information reveals the relationship between balance and agility.

In the studies published on agility, it is seen that the running and turning directions are known by the athlete, that is, planned agility is examined (21,24). But the efficiency of agility movements varies depending on the perception and decision-making process in the training environment. From this point of view, the study of the relationship between dynamic balance ability and reactive agility performance makes our study different.

The weaknesses of our study are that it is not an impact study, that it is a cross-sectional study, and that regression analysis cannot be performed due to the distribution state. However, the fact that it was performed in a certain sports branch and that reactive agility was evaluated with a new system including cognitive factors make our study strong. We think that there is a need for studies that will investigate the effects of developing agility performance with speedcourt reactive agility training on balance skill and the effects of balance exercises on reactive agility.

CONCLUSION

As a result of our study, it was determined that there is a relationship between balance and reactive agility in karate athletes, and agility performance increases as balance performance increases. Having good dynamic balance skill indicates that the athlete has less postural oscillation and more stabilization. We think that this situation will contribute to better

reactive agility activities that require constant change of direction. We believe that dynamic balance elements should not be ignored in the development of reactive agility performance in Karate sport.

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TABLES

Table 1. Demographic Caracteristics of athletes, Speedcourt agility test, T-balance test, leg length data

N=53		X±SS	Median (IQR25-75)
Age (years)		18,02±1,60	18,00 (17,00-19,00)
Height (cm)		172,13±7,59	172,00 (167,00-178,00)
Body weight (kg)		64,83±9,75	64,00 (58,10-70,00)
BMI (kg/m2)		21,80±2,26	22,04 (20,10-23,46)
Speed Court Agility Test Values (sec)	**Test time(sn)**	25,26±2,47	24,38 (23,49-26,73)
	Mean Turn Time	0,38±0,08	0,37 (0,31-0,43)
	Mean Left Turn	0,38±0,09	0,36 (0,32-0,43)
	Mean Right Turn	0,38±0,09	0,39 (0,32-0,42)
	Right-Left Difference %	20,32±17,84	15,12 (8,38-25,09)
Y balance Balance Test Values (cm)	**ANT Right**	66,57±5,77	67,00 (62,00-70,00)
	Antreior Left	66,08±6,07	66,00 (62,00-70,00)
	ANT Left	0,49±3,89	1,00 (-2,00-3,00)
	Right Posteromedial	103,66±7,31	104,00 (97,00-109,00)
	ANT Right Left difference	103,28±8,06	103,00 (97,00-110,00)
	Difference	0,38±4,69	1,00 (-2,00-4,00)
	PM Right	100,15±7,69	101,00 (96,00-106,00)
	Right Posterolateral	100,00±7,26	100,00 (94,00-106,00)
	PM Left	0,15±4,99	-1,00 (-4,00-3,00)
Leg length values (cm)	**Right Leg Length**	82,06±5,05	83,00 (78,00-85,00)
	Left Leg Length	82,02±5,15	82,00 (78,20-86,00)

Table 2.Relationship between Y Balance dynamic balance test and Speedcourt reactive agility test of athletes

			Speed Court Reactive Agility Test Values				
			Test Time (sn)	**Mean Turn Time(sn)**	**Mean Left Turn (sn)**	**Mean Right Turn (sn)**	**Right-Left Difference%**
Y-balance Dynamic Balance Test values (cm)	**ANT Right**	r	-0,195	-0,217	-0,171	-0,237	0,002
		p	0,161	0,118	0,221	0,088	0,99
	ANT Left	r	-0,249	-0,284*	-0,191	-0,262	0,095
		p	0,072	0,04	0,172	0,059	0,497
	ANT Right Left difference	r	0,099	0,121	0,068	0,057	-0,167
		p	0,482	0,39	0,63	0,685	0,232
	PM Right	r	0,351**	-0,240	-0,226	-0,273*	-0,015
		p	0,011	0,084	0,103	0,048	0,914
	PM Left	r	0,540**	-0,300*	-0,274*	-0,243	0,055
		p	0,000	0,029	0,047	0,080	0,696
	PM Right Left difference	r	-0,377**	0,137	0,117	-0,008	-0,090
		p	0,006	0,329	0,402	0,954	0,524
	PL Right	r	0,438**	-0,095	-0,071	-0,164	-0,007
		p	0,001	0,499	0,612	0,241	0,958
	PL Left	r	0,565**	-0,323*	-0,298*	-0,261	0,061
		p	0,000	0,018	0,030	0,060	0,666
	PL Right Left fark	r	-0,043	0,198	0,297*	0,139	-0,041
		p	0,761	0,156	0,031	0,322	0,768

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The Mediation Role of Yoga in The Relationship Between Personality Types and Anxiety/Depression

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Abstract

The objective of this study is to demonstrate the results of the mediating effect of yoga between personality types and anxiety and depression. Today, anxiety and depression are the primary psychological disorders that are encountered very commonly. For this reason, it is intended to evaluate the results of the supportive effect of yoga on the basis of personality traits. Within the scope of study, "Personality Types Inventory (Big5)", "Hospital Anxiety and Depression Scale (HADS)" and "Yoga Self-Efficacy Scale (YSES)" were used and a survey consisting of these scales was applied to 165 people. In order to ensure that the concepts used in Yoga Self-Efficacy Scale are understood clearly, participants are consisted of the individuals practicing yoga. The confirmatory factor analysis and the structural equation model analysis were performed on the data obtained in order to investigate the mediating effect. In addition, Cronbach's Alpha coefficients of each scale and their dimensions were calculated to test the reliability of the study. Accordingly, Cronbach's Alpha Coefficients of all scales and the sub-dimensions of scales are included in the "highly reliably" scale. As the result of the analyses, the singular relationships between scales in the model used in the study were investigated. In the singular relationships, a negative relationship was found between hospital anxiety and depression scale and yoga scale. Practicing yoga may reduce the predisposition to anxiety and depression. In addition, it has been found that yoga has a mediating role between the predispositions of the extrovert (EXT), agreeable (AGR) and self-confident (CON) people, among personality types, to anxiety and depression.

Keywords: Anxiety, Depression, yoga, Personality Types, Structural Equation Model.

INTRODUCTION

In today's world, individuals may have many psychological problems due to different reasons. Anxiety and depression are the most common ones. In society, one in five people have depression at some point in their lives. Depression is observed in three out of every 100 men and six out of every 100 women in community controls at any given time (Mete, 2008). Depression is a disorder that is not always easy to recognize. People often describe depression differently. They may complain of pain, palpitations or nausea and try to explain their grief and lack of taste in life. Most people can consult a doctor with bodily complaints, palpitations, inability to breathe, numbness and tingling, widespread pain, fainting, digestive problems, gas, nausea, such as gastrointestinal problems. Because the symptoms of depression are not clearly visible to the eye, it can sometimes feel like lack of effort, inability, or laziness. In order to decognize depression, it is important to cooperate between medical disciplines and to improve it (Couper 2003).

Anxiety, on the other hand, is a specific pathological condition accompanied by somatic symptoms due to hyperactivity of the autonomic nervous system, with a feeling of fear (Arslan et al.,2011). Physical symptoms, tremors, chills, backache and headaches, Nov tension, hyperventilation, fatigue, startle response, fading and hot flashes, tachycardia, palpitations, sweating, hands-down cool, diarrhea, dry mouth, frequent urination, fatigue, and difficulty of swallowing. A sense of fear among psychological symptoms, concentration difficulties, insomnia or somnolence, decreased libido, feeling a knot in his throat and has the feeling of contractions in the stomach (Kocabasoglu, 2008).

Whether the person's personality structure is harmonious, extroverted, self-disciplined, open to experience or stagnant, psychological disorders such as anxiety-depression can be supported by some different techniques. Breathing techniques and yoga practices are also included in these techniques (Mete, 2008). The bodily postures, namely asanas and breathing exercises used in yoga, support the strengthening of the muscles, increase in flexibility, regulation of blood circulation and increase in the oxygen ratio in the body, positively affecting hormone releases. In addition, people who practice yoga regularly have an increased resistance to stressful situations, a decrease in the risk factors for developing diseases such as cardiovascular diseases (Parshad, 2004)

Breathing exercises act as a bridge between body and mind. When the effect of breath on the muscles, joints and internal organs is evaluated, it is shared that pranayama exercises have an important place in balancing the body and mind. (Oken et al., 1994).

There are studies on the positive effects of yoga in the literature. According to a study performed on yoga, those who have been practicing yoga for at least 100 days has been found to be more self-confident than those who have not practice it (Ashokkumar and Asthana, 2016). In another study, it has been demonstrated that the 8-week hatha yoga practice may significantly increase the health-related aspects of the physical fitness in young, healthy and predominantly female subjects and it has been mentioned that yoga training may increase the muscle strength, muscle resilience, flexibility and cardiorespiratory resilience (Tran et al., 2007). According to a yoga study in people with high blood pressure, yoga is the best method that can be utilized for the cure of this disease (Satyanand et al., 2016). Desai and Vyas (2001) observed a 10% improvement in hypertensive patients following a Yogic relaxation for four weeks. Woodyard (2011) conducted a study to evaluate the findings of the articles related to therapeutic effects of yoga and to make an extensive review about the benefits of regular yoga practice.

In this study, it is desired to emphasize the importance of yoga, which is a mediator between personality types and anxiety-depression.

Study; aims to share the positive results of yoga and to contribute to the literature in the sense of yoga. In this sense; A structural equation modeling was created for the mediation effect of yoga between anxiety/depression and personality types, and the results obtained with this study are presented. In the research design department; method, sampling and data collection method are mentioned. Quantitative research method was used in the study and the obtained data were analyzed. The sample of the study consists of individuals who practice yoga. With the face-to-face survey method, the results of 170 participants were reached and the research was concluded with 165 of them.

Personality Types

Personality is an evolutionary process that involves many factors simultaneously. It includes many concepts such as genetics, biological, environmental conditions, social environment and changing living conditions. For these reasons, there are many approaches that intend to account for personality and the research is still ongoing. Burger thinks of personality as a set of processes within the personality and consistent behaviors specific to the individual (2006). Burger emphasizes the determinant attributes that distinguish us from others, not the aspects we may have in common with people, through this definition. Various theories that can describe personality under certain headings through this system of thought are put forward. The five factor theory is the most accepted approach among them (Goldberg RL, 1990; McCrae RR, Costa PT, 2003). This theory, which is also described as the distinctive trait theory, intends to try to define behavior, rather than to predict behavioral change or development. While there are different opinions on the dimensions of the five factor theory, McCrea and Costa identify the dimensions as agreeableness, extraversion, conscientiousness, openness to experience, and neuroticism. According to Agreeableness dimension, individuals are docile,

reliable, helpful, generous, acceptor and good-natured. It is said that individuals with high scores in the agreeableness dimension are prone to cooperation, while those with low scores are prone to competitiveness (McCrea & Costa, 2003). Individuals with high Extraversion scores are talkative, funny, playful, affectionate, sociable and social. Individuals with low Extraversion scores are introverted, passive, timid, quiet, inactive individuals who enjoy solitude. It has been observed that individuals with high scores in the Conscientiousness dimension are hardworking, well ordered, well organized, ambitious and determined, while individuals with low score are aimless, careless and disorganized people who do not take anything seriously.

It has been observed that the individuals with high score in Openness dimension tend to have independent thoughts and question traditional values. The individuals with high score in Neuroticism dimension are anxious, insecure, self-pitying, and are prone to emotional and stress-related psychological illnesses (McCrea & Costa, 2003).

Anxiety and Depression

Physical disorders can have negative psychological effects on individuals. Psychological negativities can reduce the people's quality of life and slow down or even worsen their recovery processes. Regardless of the disease, people are negatively affected biologically, emotionally, spiritually and socially. In individuals hospitalized for any reason, thoughts about the disease or the hospital environment can cause negative feelings and behaviors. It is known that the disease state also increases the risk of psychological disturbances (Gagnonn and Patten, 2002; Grau et al. 2003, Li et al. 2003). The factors that should be taken into consideration include the definition of physical disorder, its severity, process, the extent of its seriousness, the course of the disease, the affected organs and organ systems as well as their meaning and significance for the person. In addition, the psychological reactions shown are also very important. It is important to consider the patient as a whole when evaluating behavioral, emotional and even mental responses to physical disorder, though it varies depending on the disease and the patient (Öz 1999, Özkan 2001).

The primary psychological disorders that are encountered most commonly together with physicial disorders are depression and anxiety. Even if there is no danger in the outer environment, the person worries that something bad may happen to him/her. As a result, a fight-or-flight reaction develops in the person when the amygdala, hypothalamus, pituitary glands and all endocrine glands of the person are stimulated, resulting in the activation of sympathetic nervous system (Şahin, 2014; Özmen and Aydemir,1993; Aydemir and Bayraktar, 1996).

Later on, problems start to arise in the relationships of the individual with other people due to internal and external contact interruptions. Contact interruption may either be a reaction to mental pain or the cause of the pain itself. The person may have tendency of withdrawal, avoidance or hiding in the moments when s/he feels that the present situation is dangerous or that s/he gets hurt, and thus s/he may get away from other people and avoid external contact. This way, the person stops thinking of the things that bother him/her and learns to ignore the painful feelings or not to feel them at all.

If the sensations and tensions in the person's body remind memories, needs or fears that s/he does not want to remember, the person shuts him/herself to these sensations, may deny them and begins to become unable to solve his/her problems on his/her own (Şahin, 2019). In case that the person is under stress, which is so intense that s/he cannot cope, inexplicable anxiety disorders develop. Although the sympathetic system is not a real danger in anxiety disorders, especially in panic attacks that occur in case of panic disorders, it causes the person to be alarmed. Minor problems are exaggerated too much, especially in case of generalized anxiety disorder, and individuals suffer from constant anxiety and tension. In cases of extreme anxiety, the sympathetic system continues its effectiveness and the parasympathetic system does not come into play. People who experience such situations cannot relax, cannot rest even while sleeping, and chronic tensions and pain develop in their bodies, and even existing physiological problems intensify because of the anxiety (Şahin, 2019).

Yoga

Yoga: It is a practice that is based on breathing, physical movement and mind-oriented exercises in order to improve physical health, to be healthy and to support inner transformation (Desikachar T. 1999). Yoga is described in "Yoga Sutras" by Patanjali, which is thought to have been written between centuries between 4 BC and 4 AD, in detail. Sutras are defined as the aphorisms of yoga, and the processes of yoga are also described in detail. Yoga sutras are

the first known written texts of yoga and serve as a guide for yoga (Patanjali, 2011). Patanjali says that when an individual trusts in his/her own yoga practice, this can improve his/her physical and mental health and increase confidence (Desikachar T., 1999).

Yoga contains eight stages on which person needs to contemplate and comprehend in order to start his/her own inner journey and to purify his/her body and mind regularly. These are yama, niyama, asana, pranayama, pratyahara, dharana, dhyana and samadhi (Patanjali, 2011). Yamas include all negative behaviors that the person should avoid such as lies, theft, hypocrisy, greed, excessive consumption, and gossip. Niyamas are positive attitudes and behaviors that need to be repeated and reinforced. Behaviors such as bodily and spiritual cleansing, thankfulness, thanking and living simply can be given as examples of Niyamas. Asana literally means posture in Sanskrit. It is the state that the body takes certain postures. Prana refers to life force and pranayama refers to breathing techniques. Pratyahara is the state of failure of us to feel the effects of our sense organs. Dharana refers to concentration, or focusing, of the attention on a single point. Dhyana, on the other hand, is the name of the studies aimed at increasing the level of awareness through the use of meditation techniques. Samadhi can be defined as the state that the individual meets with his/herself (Desikachar, 1999). Krishnamacharya, who is regarded as the founder of yoga, is of the opinion that these eight stages, which are considered as the steps of yoga, can be explained under 3 basic principles:

1-Body: It is the practices done to relax the body with the help of asanas. Those who do physical exercise regularly perform breathing in the form of flow by using body movement.

2-Breath: Practice can also be done only by breathing, with no body movement. This is called pranayama. Besides, breathing and body exercises are performed simultaneously.

3-Mind: It is a state of meditation. Meditation is a state of mental silence (Desikachar, 1999).

Yoga and anxiety-depression relationship

Many studies that have been conducted recently state the positive effects of yoga. It is observed that regular yoga practices increase the muscle strength in the body and the body flexibility, improve the respiratory and cardiovascular functions, are used as a method to promote the dependency treatment, lead to a decrease in anxiety, depression, stress and chronic pains, have a positive impact on regulation of sleep and increase the quality of life (Woodyard, 2011). In addition, it has been put forward that yoga can be an additional recommendation for psychological problems of people and should be tried together with pharmacological treatment. It has been emphasized that yoga is as effective in elimination of anxiety, depression and stress as cognitive behavioral therapy and other active control interventions (Bussing et al., 2012).

However, today, yoga is also recommended as holistic health approach and booster (Jeter et al., 2015). In many studies related to the field in the literature, it has been reported (by Chan et al., 2011) that mind-body and breath therapies have positive effects to equilibrate the psychiatric disorders such as depression (Nakao et al., 2001; Shapiro et al., 2007) and anxiety (Deckro et al., 2002).

In the studies conducted on feelings in particular, it has been put forward that yoga increases the positive feelings and decreases the negative feelings (Dwivedi et al., 2015; Kale, 2017).

Research Pattern

Methodology

Ouantitative research method was used in this study. The research pattern is the literature review. A questionnaire was used as data collection method. SPSS 22.00 and AMOS 22.00 were used to analyze the data in the study.

Participants

In order to understand the concepts clearly, the sample was created with the participants who practiced yoga. For this, simple random sampling technique within the scope of probability sampling methods was used as the sampling selection technique. A survey was conducted on 170 people between August 2019 and December 2019. As a result of the review, 5 surveys were excluded from the evaluation because the rate of completion was very low. The study was conducted with results obtained from 165 participants.

Data Collection Method

Three different scales were used in this study. The recent version of Big five personality scale consisting of 16 items and 5 sub-dimensions was put forward by McCrea and Costa. Five dimensions were determined as agreeableness, extroversion, self-confidence, openness to experience and neurotic

tendency. These 5 dimensions are scored by the 5-point likert scale. According to this, it is stated that the individuals with a high agreeableness score are predisposed to collaboration and those with lower score are predisposed to competition (McCrea and Costa, 2003). In extroversion dimension, the individuals with higher scores are talkative, fun, joker, affectionate, sociable and outgoing. Those with lower scores are introvert, passive, timid, quite, inactive people who love solitude. In the self-confident dimension, it has been observed that the individuals with higher score are hard-working, tidy, well-organized, ambitious and determined, whereas the individuals with lower score are reckless, purposeless, inattentive and untidy. In the Openness to Experience dimension, it has been observed that the individuals with higher score have independent opinions and are predisposed to question the traditional values. In Emotional Stability dimension, those with higher score are anxious, insecure, self-pitying, emotional and prone to the stress-related psychological disorders (McCrea and Costa, 2003).

"The Hospital Anxiety and Depression Scale" (HADS) was developed by Zigmond and Snaith in 1983. The scale consists of 14 items. 7 of these items measure anxiety symptoms and the other 7 measure depression symptoms. The items in the scale are assessed through a 4-point Likert scale and are based on a scoring system ranging between 0-3. According to the scoring, the score between 0-1 is considered as people with no disease, the score '2' is considered as patient at borderline, and '2-3' is considered as seriously ill patient. In addition, it seems that the scores obtained from the scale are not affected by physical disorders (Clark & Steer, 1994).

The aim of the scale is not to make a diagnosis, but to measure the psychological conditions of the patients and to take the necessary precautions (Zigmond & Snaith, 1983).

Validity and reliability analysis of the scale was carried out in 1997 by Aydemir et al. along with the adaptation study to Turkish. The HAD scale was also applied to those with no physical disease, but it was observed that it yielded more sensitive results in patient groups (Aydemir et al., 1997).

The yoga self-efficacy scale (YSES) used in the study was developed by Gurjeet S. Birdee, Stephanie J. Sohl and Ken Wallston in 2016. The scale contains items related to the three basic principles of yoga, namely body, breath and mind. They used the self-efficacy items of Desikachar and the theory of Bandura and Schwarzer while creating the scale. However, they took the concepts of focus, stretch, understandability and convenience into consideration while creating the items. As a result of the studies on the scale, they gathered the items under three main titles, namely body, breath and mind, in a way to reflect yoga. Through studies, the scale that was prepared in 32 items was assessed by many experts and yoga experts from the Krishnamacharya school and reduced to 14 items (Gurjeet S. Birdee, Stephanie J. Sohl and Ken Wallston, 2016). Support from 3 yoga teachers who have been living with yoga for many years in the teaching of Krishnamacharya was taken to improve the scale and to re-evaluate the items in the scale. Arrangements were made as a result of the feedbacks of the yoga teachers and interviews made for their feedbacks. The scale was directed to the volunteers verbally, also taking their cognitive characteristics into account. A 9-point Likert scale was used for the responses of the items (ranging from "strongly disagree" to "strongly agree"). Scale was re-evaluated, edited, revised and as a result, a 13-item YSES (Yoga Self-Efficacy Scale) was developed, considering volunteers' state of understanding/not understanding and responding/not responding to the items (Gurjeet S. Birdee, Stephanie. Sohl and Wallston, 2016).

Participants

In order to understand the concepts clearly, the sample was created with the participants who practiced yoga. The participants are consisted of the people who regularly practice yoga.

Table 1. Demographic Characteristics of Participants

		N (165)	%
GND	male	23	13,9%
	female	142	86,1%
AGE	less than 25	1	0,6%
	Between 25-29	12	7,3%
	Between 30-34	45	27,3%
	35 and above	107	64,8%
EDC	primary/elementary school	1	0,6%
	high school	7	4,2%
	university	109	66,1%
	master's degree/phd	48	29,1%
Profession	manager	91	55,2%
	member of profession	25	15,2%
	teacher-lecturer	30	18,2%
	other	19	11,5%
EXP	less than 5 years	18	10,9%
	5-10 years	35	21,2%
	11-16 years	41	24,8%
	16 years and above	71	43,0%

As seen in Table 1: 142 women make up 86.1% of the participants, and 23 men make up the remaining 13.9%. 64.8% of the participants are 35 and over, 27.3% of them are people between the ages of 30 and 34. 109 people, who make up 66.1% of the sample, are university graduates and 48 people have a graduate level education. While 55.2% of the 91 people are working in managerial status, 30 people corresponding to 18.2% are working in the status of trainers. The experience of 43% of the participants is over 16 years, and the experience of 41 people, 24.8% of them, is between 11 and 16 years.

Analysis of Data

The data obtained as a result of the survey study were analyzed by using SPSS 22.00 and AMOS 22.00 programs. The mediation effects of the scales used in the survey were investigated by confirmatory factor analysis and structural equation modeling through AMOS program. Reliability and Internal Consistency Criterion Values of the Scales: The scale(s) used in a survey should be evaluated in terms of reliability and validity. Reliability also demonstrates how consciously the questions asked to measure a variable have been responded (Özdoğan & Tüzün, 2007).

In this study, Cronbach's Alpha coefficients, which are the fit value based on the correlation between the questions, were used for the Reliability Analysis. Cronbach's Alpha value also shows the reliability level of the items below the factor. Classification for these values was presented in Table 2 (Şeref K., 2006).

Table 2. Classification for Cronbach's Alpha

Cronbach's Alpha	**Interpretation**
0,80 to 1,00	High Reliability
0,60 to 0,80	Highly reliable
0,40 to 0,60	Low reliability
0,40 and below	Not reliable

It has a very reliable level with the Big Five (,786) value, one of the scales used. For the Hospital Anxiety and Depression (HADS) scale and the Yoga Self-Efficacy Scale (YSES), these coefficients were calculated as (,805) and (,875), respectively, and were included in the high reliability scale.

Table 3. Reliability Values of the Scales

Scale	Number of Items	Cronbach's Alpha
Big Five(BF)	10	0,786
Extraversion (EXT)	2	0,771
Agreeableness (AGR)	3	0,765
Conscientiousness (CON)	3	0,745
Emotional Stability (EM)	2	0,712
Anxiety and Depression Scale (HADS)	9	0,805
Anxiety	6	0,813
Depression	3	0,745
Yoga Self-Efficacy Scale (YSES)	12	0,875
Body (BD)	5	0,856
Breath (BRT)	4	0,823
Mind (MND)	3	0,812

The participants are consisted of the people who regularly practice yoga.

Big Five (BF) scale was gathered under 4 dimensions. Cronbach's Alpha values of its sub-dimensions are as follows: Extraversion (0,771), Agreeableness (0,765), Conscientiousness (0,745) and Emotional Stability (0,712) and these values are included in the highly reliable scale. In the sub-dimensions of the Hospital Anxiety and Depression (HADS) scale, it has a "high reliability" level in the Anxiety dimension with the value of (0,813), and a "highly reliable" level in the depression dimension with the value of (0,745).

In the Yoga Self-Efficacy Scale sub-dimensions, Cronbach's Alpha values of Body (0,856), Breath (0,823) and Mind (0,812) have the "high reliability" level.

Confirmatory Factor Analysis:

The significance of the measurement models was investigated with the AMOS 22.00 package program. When the results were examined, it was observed that the measurement models had acceptable criteria. In the evaluation of the confirmatory factor analysis applied to the scales used for the study, whether the general tested models are suitable or not have been determined as a result of the examination of the Chi-Square ($\chi 2$) value corrected by the the degree of freedom (Chi-Square value/Degree of freedom), other goodness of fit indexes and values in the standardized residual covariance matrix (Bayram, 2013). And Table 4 was taken as reference for acceptable limits of the goodness of fit indexes that were used (Meydan, 2011).

$\chi 2$ /sd: Since chi-square statistics are affected by the sample size too quickly, $\chi 2$ /sd ratio which is affected less by the sample is a measure that can be used instead of it (Şimşek 2007; Waltz, Strcikland and Lenz 2010). This value that is obtained by dividing $\chi 2$ value by the freedom degree must be equal to or less than two. A value of or below five is an acceptable value (Munro 2005; Şimşek 2007; Hooper and Mullen 2008).

RMSEA (Root Mean Square Error of Approximation): It is a measure of the approximate fitness in the matrix. It takes a value between zero and one (Munro 2005; Yılmaz and Çelik 2009; Çokluk,

Şekercioğlu and Büyüköztürk 2010; Schumacker and Lomax 2010). Normal and acceptable values are given in Table 4.

GFI: It refers to Goodness of Fit Index (Yılmaz and Çelik 2009). It shows to what extent the model measures the covariance matrix in the sample (Çokluk, Şekercioğlu and Büyüköztürk 2010; Waltz, Strcikland and Lenz 2010). GFI value varies between 0 and 1. If the GFI is greater than 0.90, this shows that model is fit (Munro 2005; Waltz, Strcikland and Lenz 2010).

AGFI (Adjusted Goodness of Fit Index): It is an index used to make up for the deficiency of GFI test in the high sample volume. Its value varies between 0 and 1 and must be higher than 0.90 (Munro 2005; Çokluk, Şekercioğlu and Büyüköztürk 2010).

SRMR (Standardized Root Mean Square Residual): As this value approaches to zero, it is understood that the tested model shows a better goodness of fit. Its standardized form is called SRMR goodness of fit index (Çokluk, Şekercioğlu and Büyüköztürk 2010; Wang and Wang 2012). Normal and acceptable ranges are given in Table 4.

CFI (Comparative Fit Index): It gives the difference of the established model from the deficiency model, assuming that there is no relationship between the variables. It is a model that assumes there is no relationship between variables. Its value varies between 0 and 1(Munro, 2005; Çokluk, Şekercioğlu and Büyüköztürk, 2010).

Table 4. Goodness of Fit Index and Fit Values

Indexes	Good Fit	Acceptable Fit
$\chi 2$ / df	$0 \leq \chi 2/df \leq 2$	$2 < \chi 2/df \leq 3$
GFI	$\geq 0,90$	0,85 to 0,89
CFI	$\geq 0,97$	$\geq 0,95$
SRMR	$\leq 0,05$	$0,06 \leq SRMR \leq 0,08$
RMSEA	$\leq 0,05$	$0,06 \leq RMSEA \leq 0,08$

Big five Personality Scale (BF)

In the big five scale used, 6 items were eliminated because their factor loads were low. This brought the result that this scale was gathered under 4 dimensions, unlike the literature. The analysis continued with the remaining 10 items. In DFA performed with the remaining 10 items, the item factor weight values are within the range of (0,57; 0,80).

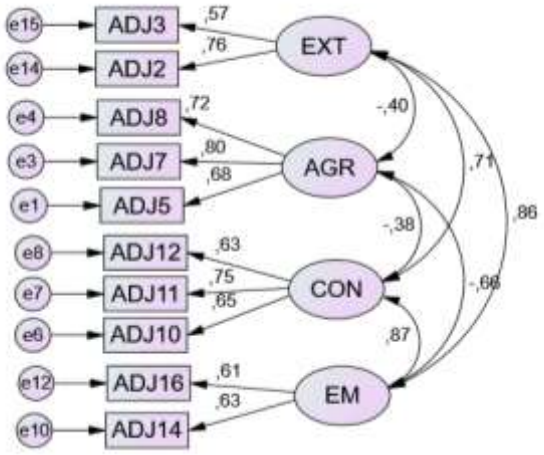

Figure 1. DFA for Big five

(Agreeableness (AGR), Extraversion (EXT), Conscientiousness(CON), Emotional Stability (EM), Yoga Self-Efficacy (YSE))

It is understood that DFA is significant since the model test values have been found to be $\chi 2$ (45,51), $\chi 2/df$ (1,625) in the confirmatory factor analysis. GFI (0,949), CFI (0,950), SRMR (0,075), RMSEA (0,062), the fit index values of the model, are within acceptable limits, so DFA is valid.

DFA for Hospital Anxiety and Depression Scale (HADS)

5 items from the 14-item Hospital Anxiety and Depression (HADS) scale were eliminated because their item factor loads were low. In DFA performed with the remaining 9 items, it is observed that the item factor weight values are within the range of (0,51; 0,78).

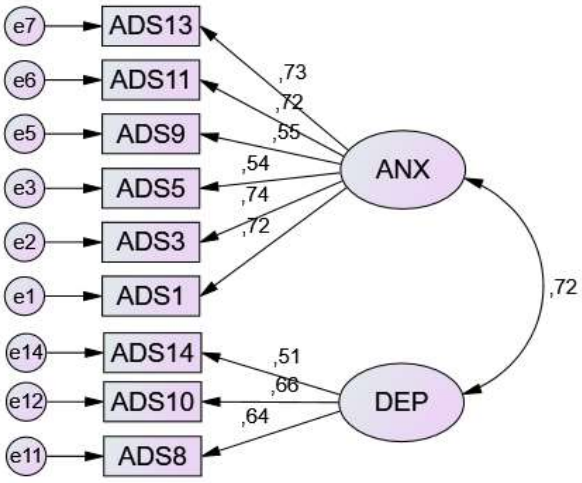

Figure 2. DFA for HADS

(Anxiety (ANX), Depression (DEP))

DFA is significant since the model test values have been found to be χ2 (208,21), χ2/df (1,395) in the confirmatory factor analysis. GFI (0,961), CFI (0,980), SRMR (0,0405), RMSEA (0,049), the fit index values of the model, are within acceptable limits.

Consequently, it can be said that the confirmatory factor analysis for Hospital Anxiety and Depression (HADS) Scale is valid.

Yoga Self-Efficacy Scale (YSES)

One item from the 13-item Yoga Self-Efficacy scale was eliminated because its item factor load is low. In DFA performed with the remaining 12 items, the item factor weight values are within the range of (0,53; 0,90).

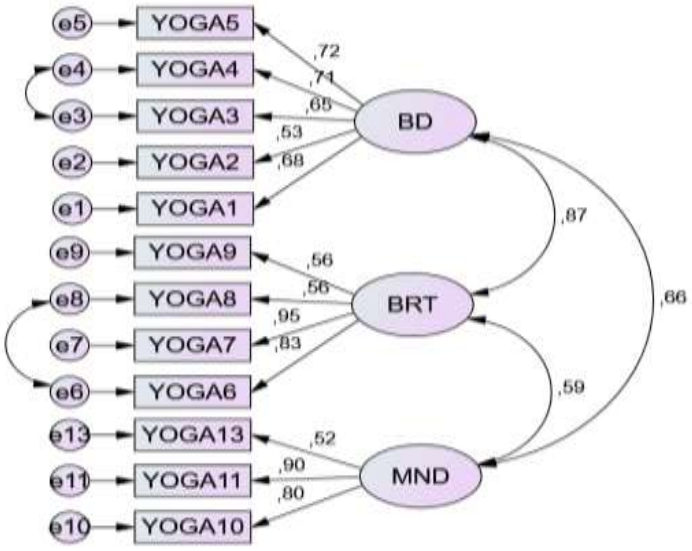

Figure 3. DFA for YSES

(Body (BD), Breath (BRT), Mind (MND))

DFA is significant since model test values has been found to be: χ2 (87,70), χ2/df (1,993) in the confirmatory factor analysis. It can be said that the Confirmatory Factor Analysis of the Yoga Self-Efficacy scale is valid because GFI (0,923), CFI (0,954), SRMR (0,069), RMSEA (0,078), the fit index values of the model, are within acceptable limits.

Mediator Variable Effect Study by Means of Amos

According to Bayram (2013), the models revealing the existence of mediator variables form the basis of structural equation modeling and these models can be considered as simple structural

equation models (Craig, 2009). If a variable meets the requirements in Figure 4, it is called as the mediator (arbitrator, intermediary) variable (Baron & Kenny, 1986; MacKinnon, 2008).

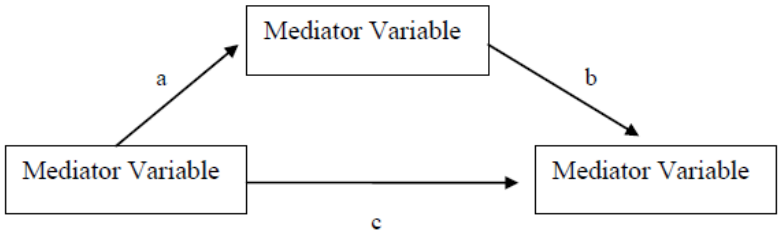

Figure 4. Mediator Model

1) When the changes in the independent variable account for the reasons of the changes in the predicted mediator variable and are significant (path a),
2) When the changes in the mediator variable account for the reason of the changes in the dependent variable and are significant (path b),
3) If the previously significant relationship between the dependent and the independent variable is no longer significant (path c), one can speak of the presence of a mediator. In the event that the path c approaches zero, it means that there is a single and dominant mediator, and in the event that the path c is not zero, there are multiple mediator factors.

In order to understand whether the mediator requirements are met or not, it should be investigated whether the relationships between the independent variables and the mediator variable, the relationships between the mediator variable and the dependent variable, and the singular relationships between the independent variable and the dependent variables are significant.

Table 5. Singular Effect Values

Effect	Exogenous	Effect	Endogenous	β	Std. β	CR	p
Independent→Dependent	EXT	→	HADS	-1,070	-,742	-3,688	,000***
	CON	→	HADS	-,637	-,638	-4,537	,000***
	AGR	→	HADS	,573	,707	4,475	,000***
	EM	→	HADS	-,129	-,134	-,456	,745
Independent→Mediator	EM	→	YSE	,599	,471	3,169	,002
	CON	→	YSE	-,288	-,420	-3,970	,000***
	AGR	→	YSE	,303	,450	4,151	,000***
	EXT	→	YSE	.425	,471	3,588	,000***
Mediator→Dependent	YSE	→	HADS	-,458	-,687	-5,003	,000***

(Agreeableness (AGR), Extraversion (EXT), Conscientiousness(CON), Emotional Stability (EM), Yoga Self-Efficacy (YSE)).

Significant effects on the effects of the Big Five scale sub-dimensions, which are independent variables, on the mediator variable in singular relations are as follows: Effect of EXT variable on HADS variable (β=-1,07; p<0,05); Effect of CON variable on HADS variable (β=-,637; p<0,05); Effect of AGR variable on HADS variable (β=,573; p<0,05).

The non-significant relationship is, on the other hand, the effect of the EM variable on the HADS variable (β=-,129; p>0,05).

Consequently, the mediation state of the YSE variable regarding the effect of the EM variable on the HADS variable goes away. In this case, it will be sufficient to take EXT, CON and AGR variables that have significant effects on the HADS variable for mediation.

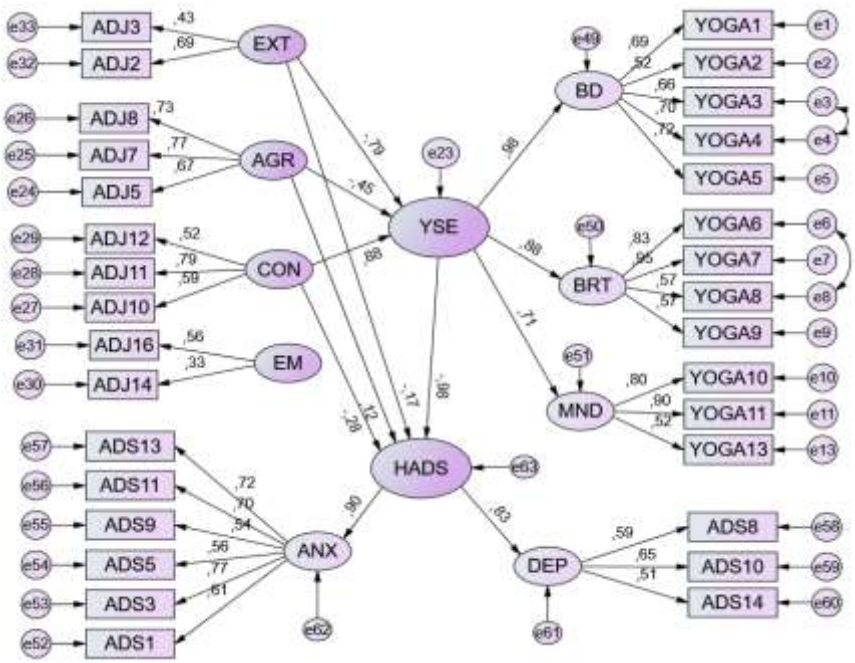

Figure 5. Multiple Mediator Model Tested

Since the model test values used for the mediator model analysis have been found to be as follows: $\chi 2$ (775,96), $\chi 2/df$ (1,955), model is significant. In addition, it has been found that the fit index values are GFI (0,831), CFI (0,826), SRMR (0,0814), RMSEA (0,070). GFI, CFI and SRMR values are close to acceptance limits, but outside the limits. It is an expected situation for the models with full mediator not to be within the acceptance limits (Baron & Kenny,1986; MacKinnon, 2008). Details of the effect values included in the model are presented in Table 6.

Table 6. Singular effect values between independent, dependent and mediator variable

	Exogenous	Effect	Endogenous	β	Std. β	CR	p
Independent→Mediator	EXT	→	YSE	-,716	,362	-1,975	,048
	AGR	→	YSE	-.480	,168	-2,855	,004
	CON	→	YSE	,754	,275	2,746	,006
Mediator→Dependent	YSE	→	HADS	-,667	,212	-3.151	,002
Independent→Dependent	**AGR**	→	HADS	,087	,121	.739	,460
	EXT	→	HADS	-,102	-,166	-,329	,742
	CON	→	HADS	-,164	-,281	-,413	,679

(Agreeableness (AGR), Extraversion (EXT), Conscientiousness(CON), Emotional Stability (EM), Yoga Self-Efficacy (YSE))

In the model, the effect of EXT variable on YSE variable (β= -,716; p<0,05) is significant. The effect of YSE variable on HADS variable (β= -,667; p<0,05) is significant. These results will be verified by means of Sobel Test, as well.

In the model, the effect of AGR variable on YSE variable (β= -,480; p<0,05) and the effect of YSE variable on HADS variable (β=-,667; p<0,05) are significant. Since the value of the effect of AGR variable on the HADS variable (β=,087; p>0,05) is not significant, it is understood that YSE variable has a complete mediation effect on the effect of AGR on HADS variable. This model will also be verified by means of Sobel Test.

It has been found that the effect of CON variable on YSE variable (β= -,754; p<0,05) and the effect of YSE variable on HADS variable (β=-,667; p<0,05) are significant. Since the value of the effect of CON variable on the HADS variable (β=,164; p>0,05) has been found to be non-significant, it is understood that YSE variable has a complete mediation effect on the effect of CON on HADS variable. This model will also be verified by Sobel Test.

Baron and Kenny's three-step method is used in academic studies and partial or complete mediation decision is made according to the result of the analysis. In addition, it is necessary to put forward whether the indirect effect of the exogenous variable on the endogenous variable is significant through the mediator variable in order to talk about the mediation effect. There are various tests for this purpose. Sobel Test is the most preferred one among them (Sobel, 1982). For Sobel test, uncorrected regression coefficients (β) of relevant variables and their standard error values are used (Sobel, 1982).

Table 7. Sobel Test Values FOR Mediator Relationships

Model No.	Endogenous	Effect	Exogenous	β	SD	p
	EXT	→	YSE	-,716	,279	
1	YSE	→	HADS	-,667	,212	**0,04673975***
	AGR	→	YSE	-,480	,168	
1	YSE	→	HADS	-,667	,212	0,03441809*
	CON	→	YSE	,754	,275	
2	YSE	→	HADS	-,667	,212	**0,03872962***

*Sobel Test P value *p<0.05 **p<0.01*

(Agreeableness (AGR), Extraversion (EXT), Conscientiousness(CON), Emotional Stability (EM), Yoga Self-Efficacy (YSE))

The effect of EXT variable on HADS variable in singular relations (β= -1,07; p<0,05) is significant; however, together with YSE variable falling between EXT and HADS, the value of the effect of EXT variable on HADS variable is (β= -,102; p>0,05), so the complete mediation was confirmed by the value (p <0,05) found in the Sobel test. The YSE variable is the complete mediator between EXT and HADS variables. The effect of the CON variable on the HADS variable in singular relations (β= -,637; p<0,05) is significant; however, together with the YSE variable falling between CON and HADS, the value of the effect of CON variable on the HADS variable is (β= -,1645; p>0,05), so complete mediation was confirmed by the value (p <0,05) in the sobel test. The effect of the AGR variable on the HADS variable in singular relations (β=,573; p<0,05) is significant; however, together with the YSE variable falling between AGR and HADS, the value of the effect of AGR variable on the HADS variable is (β=,087; p>0,05). Consequently, it was confirmed by the value (p <0,05) found in the Sobel test that it was complete mediation.

Conclusion and Discussion

In this study, the relationship between yoga and the tendency of individuals with different personality types to anxiety and depression was investigated. For this purpose, all scales used within the scope of the model were analyzed with the sample used in the research. To this end, Cronbach's Alpha coefficients of each scale were calculated and Reliability Analyzes of the scales were performed. As a result of the reliability analysis, it was observed that each scale was reliable. Then Confirmatory Factor Analysis was applied to the scales in order to analyze the construct validity and to examine whether the collected data is compatible with the theoretical structure. While evaluating the confirmatory factor analysis, $\chi 2$, $\chi 2/df$, GFI, CFI, SRMR and RMSEA values were taken into consideration and each scale was examined with these goodness of fit values. According to the analysis results, the goodness of fit values of the scales are within acceptable limits. As a result, it was determined that the goodness of fit values and the scales were verified by the data. Then, a confirmatory factor analysis of the proposed structural equation model was performed and the goodness of fit values were evaluated, and the mediation effects were tested. The singular relationships between the scales in the proposed model were studied. In singular relationships, a negative-oriented relationship was found between the hospital anxiety and depression scale and the YSE yoga scale. Practicing yoga can reduce the tendency to anxiety and depression. It is observed that regular yoga practices increase the muscle strength in the body and the body flexibility, improve the respiratory and cardiovascular

functions, are used as a method to promote the dependency treatment, lead to a decrease in anxiety, depression, stress and chronic pains (Woodyard, 2011).

Extroverted (EXT), self-disciplined (CON), and adaptive (AGR) personality types variables, which have significant effects on the anxiety/depression (HADS) variable in the mediating effect of yoga, were discussed together with the examination of singular relationships. In addition, it is one of the results that the effect of the YSI variable on the HADS variable is significant (β=-.667; $p<0.05$). With this result, it is seen that the susceptibility to anxiety and depression decreases in individuals who practice yoga. Yoga affects anxiety and depression predisposition negatively. This result is compatible with the literature. It has been emphasized that yoga is as effective as cognitive behavioral therapy and other active control interventions in eliminating anxiety, depression and stress (Bussing et al., 2012).

When examining singular relationships, personality types variables EXT, CON, AGR, which have significant effects on the HADS variable in the mediation effect of yoga, were discussed.

The results of the Sobel Test conducted to confirm the mediation effects have shown that YSE yoga variable is the complete mediator between EXT extroverted personality type and HADS variables; YSE yoga variable is complete mediator between CON self-disciplined personality type variable and HADS variable; and the YSE variable is the complete mediator between the AGR compatible personality type variable and the HADS variable. Accordingly, yoga has a mediating role between the extroverted (EXT), agreeable (AGR) and conscientious (CON) personality types of the people, and their tendency to anxiety and depression, and the relationships established with this model are statistically significant.

Accordingly, yoga has a mediating role among the decisiveness of people who are extroverted, compatible and self-disciplined from personality types to anxiety and depression, and the relationships established with this model are statistically significant. If there is a predisposition to anxiety and depression in extroverted, harmonious and self-disciplined people, yoga can have the ability to reduce this predisposition. Many studies related to the field in the literature have reported that there are positive effects of mind-body and breath therapies on balancing psychiatric disorders (Chan et al., 2011). such as depression (Nakao et al., 2001; Shapiro et al., 2007) and anxiety (Deckro et al., 2002). In particular, in studies conducted on emotions, it has been revealed that yoga increases positive emotions and, in turn, reduces negative emotions (Dwivedi et al., 2015; Castle, 2017).

Yoga has a very long history. It can have positive contributions to body, mind and spirit. Therefore, more studies need to be conducted on yoga. These studies should be reproduced with larger samples.

The studies should be diversified and thus, the effects of yoga should be examined. According to the scales used in this study, yoga and practices related to yoga have a positive impact on people in physical, mental and spiritual terms. It has been found that depression and anxiety levels decrease in individuals who regularly do yoga.

This study was carried out with the participants practicing yoga. It has been found that yoga has a complete mediating role between anxiety and depression and personality traits.

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Self-Handicapping and Its Value in Sports

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Abstract

Self-handicapping can be defined as an effort to voluntarily create excuses that an individual can use in case of a potential failure. Self-handicapping behavior, which can be manifested either behaviorally or verbally, helps protect the self-esteem of the individual in the short term but causes psychological/social problems if used frequently. Studies on self-handicapping in the literature are generally concentrated in the academic field. The method used in this study was reviewing the original articles related to the topic of self-handicapping and sports. There are frequent studies on self-handicapping levels of academic staff, students, and teachers. This study was carried out to examine the studies on self-handicapping in the field of sports. The number of studies in the field of sports is limited. In studies investigating which variables were affected by self-handicapping, it was seen that sociodemographic variables did not affect the level of self-handicapping, but there was a controversy in the gender variable because there were conflicting results regarding the effect of gender on self-handicapping levels. There were also studies reporting that self-handicapping was associated with self-esteem and examined it. It was reported that self-esteem had a negative correlation with self-handicapping, and individuals with high self-esteem tended to have low self-handicapping behavior. In sports performances, the value attributed by the individual to this performance (competition or performance test) affected the self-handicapping tendency of the athlete. As the importance of performance increased, the tendency of athletes to self-handicapping also increased. In team sports, athletes' tendency to claimed self-handicapping behavior may lead to negative consequences such as the exclusion of athletes from the team. It was concluded that the studies on self-handicapping in sports focused on athletes and referees, but there were no studies investigating the self-handicapping tendencies of coaches. Studies on disabled athletes were limited. It was considered that increasing the number of studies conducted in the field of sports, especially on disabled athletes and trainers, would fill the gap in this field.

Keywords: Athlete, self-handicapping, self-esteem, excuse, failure

Özet

Kendini sabotaj, bireyin potansiyel başarısızlık durumunda kullanabileceği mazeretleri önceden planlı olarak yaratma çabası olarak tanımlanabilir. Davranışsal ya da sözel olarak iki şekilde ortaya çıkabilen kendini sabotaj davranışı, kısa süreli kullanımda bireyin benlik saygısını korumaya yardımcı olurken, sık kullanımı halinde psikolojik ve sosyal sorunlara yol açmaktadır. Literatürde kendini sabotaj ile ilgili çalışmalar genellikle akademik alanda yoğunlaşmıştır. Akademik personelin, öğrencilerin ve öğretmenlerin kendini sabotaj düzeylerinin incelendiği çalışmalara sıklıkla rastlanılmıştır. Ancak, bu çalışma, spor alanında kendini sabotaj konusunda yapılan çalışmaların incelenmesi amacıyla gerçekleştirilmiştir. Çalışmada kullanılan yöntem, kendini sabotaj ve spor konusundaki makalelerin tasnif edilerek incelenmesidir. Literatürde spor alanında yapılan araştırma sayısının çok fazla olmadığı görülmüştür. Kendini sabotajın hangi değişkenlerden etkilendiğinin araştırıldığı çalışmalarda, sosyodemografik değişkenlerin kendini sabotaj düzeyini etkilemediği, cinsiyet faktörünün etkisi hakkında ise uzlaşılmış bir karar olmadığı görülmüştür. Cinsiyetin kendini sabotaj düzeyine etkisi ile ilgili çelişkili bulgular mevcuttur. Kendini sabotaj ve benlik saygısı arasında ilişki olduğunu bildiren ve bunu incelemiş olan çalışmalar da mevcuttur. Benlik saygısının kendini sabotaj ile negatif korelasyona sahip olduğu, benlik saygısı yüksek olan bireylerin kendini sabotaj davranışına yöneliminin düşük olduğu bildirilmektedir. Spor alanındaki performanslarda, bireyin bu performansa (müsabaka ya da performans testi) atfettiği değer, sporcunun kendini sabotaj eğilimini etkilemektedir. Performansın önemi arttıkça, sporcuların kendini sabotaj eğilimi de artmaktadır. Takım sporlarında sporcuların sözel kendini sabotaj davranışına yönelmesi, sporcuların takımdan dışlanması gibi olumsuz sonuçları ortaya çıkartabilmektedir. Yapılan literatür taraması sonucunda, spor alanında yapılan kendini sabotajla ilgili çalışmaların sporcular ve hakemler üzerinde yoğunlaştığı görülmüş ancak antrenörlerin kendini sabotaj eğilimlerinin araştırıldığı herhangi bir çalışmaya rastlanılmamıştır. Engelli sporcular üzerinde yapılan çalışmalar ise yeterli sayıda değildir. Spor alanında, özellikle engelli sporcular ve antrenörler üzerinde, yapılan çalışmaların sayısının artırılmasının, bu alandaki boşluğu dolduracağı değerlendirilmektedir.

Anahtar kelimeler: Sporcu, kendini sabotaj, benlik saygısı, mazeret, başarısızlık

INTRODUCTION

At the very top of Maslow's hierarchy of needs, self-actualization is located and it means that individuals are in need of self-actualization after their physiological, safety, love/belonging, and esteem needs are met (40). Self-actualization may be exhibited in different fields such as science, art, music, and sport (60). Sport is a phenomenon in which self-actualization is the main goal (74) and that goal is achieved by beating the opponent(s) through physical performance. Although it seems that sport covers only athletes, it also includes other aspects such as referees, coaches, and managers. An athlete's goal is to win the game while the referee's goal is to officiate the game flawlessly, and the coach and/or the manager wants the team to be the champion. It may seem that the goals of these stakeholders differ from each other, but the common goal here is "to be successful" and achieve self-actualization through this success.

In today's success-oriented world, the quality of individuals' performances has a great deal of impact on their feelings. Meeting the need for success satisfies individuals' feelings such as self-esteem, self-worth, and self-actualization (11). Success sprouts the feelings such as competence, pride, self-confidence, and happiness, while failure leads to feelings like incompetence, grief, weakness, embarrassment, and impaired self-esteem. The fact that the results of performance have such strong effects may affect the behaviors of the individuals who want to protect themselves from these possible negative emotions (20). In other words, an individual, who makes an effort to achieve success but realizes the possibility of being faced with the feeling of "inadequacy" in case of failure, may reduce the effort to be successful and try to protect his self-esteem by thinking that the possible failure is not caused by himself (86). Failure or defeat leads to a state of anxiety that individuals will be perceived as inadequate by others, and that feeling causes individuals to tend towards behaviors to protect their self-esteem. These behaviors aim to externalize the cause(s) of failure and try to protect self-esteem (13).

Internal and/or external obstacles that individuals may encounter while trying to reach their goals raise the possibility of negative experience(s). When an individual perceives the possible failure in performance as a threat to himself, he may tend to create the conditions that will cause his performance to decrease voluntarily (51). An athlete, who has an important game the next morning, may prune a tree instead of preparing for the game. The main reason for this behavior is the voluntary effort to create an excuse and to be able to say that he has to work in the garden the day before if the game fails. On the other hand, if he wins the game, he will think that he is talented enough that he does not have to prepare for the game. Either way, he will protect his self-esteem. Any attempt to create a pseudo-excuse that will decrease the chance of success, and use it as the reason for the potential failure will satisfy his needs in case of failure, it will also be useful in case of success. No matter what the result of the game is, the athlete will use its benefit (5). The athlete, in fact, self-handicapped himself by pruning the trees but not preparing for the game (47).

The current study was a review and its purpose is to summarize previously published studies related to 'the self-handicapping and sports' topic. The articles to be reviewed were elected by using a specific set of keywords and searching the original articles by using the keywords on DergiPark (provided by Tubitak ULAKBIM) and Google Scholar databases. The keywords used were set as self-handicapping (kendini sabotaj), fear of failure (başarısızlık korkusu), sports (spor), competition (müsabaka) and self-esteem (benlik saygısı). Turkish keywords were used in searching on DergiPark and English keywords were used for Google Scholar searches. The lists were exported to Excel and alphabetically listed by the titles. The results were then refined by removing the titles repeated more than once. The refined list was reviewed again to evaluate the articles to find out if they were appropriate and fall within the scope of the current study. The final list of articles was then taken into consideration and the study was conducted by reviewing them.

Self-handicapping

The term self-handicapping was first introduced into the literature by Jones and Berglas (41) and it was defined in many different ways, but as a general view, self-handicapping is "the voluntary effort to produce a planned excuse prior to a potential failure to protect self-esteem" (16, 51, 76). This strategy enables the internalization of the success and externalization of the failure (1). Since the idea of failing a task causes high levels of stress for individuals, individuals sometimes think that they will be able to preserve their sense of self-efficacy by creating excuses that reduce their likelihood of

success and by using these excuses as a protective shield (5). Self-handicapping, indeed, is not an effort to fail, the aim of self-handicapping is to will to externalize the potential failure if failure is perceived as important. However, self-handicapping, itself, deteriorates individuals' performances and makes it harder to be successful (15). Externalization of failure is important because if an individual can do this, he admits his failure without any hesitation (41).

Self-handicapping is used primarily to protect self-esteem but it may be used to manipulate others' perceptions (35, 84). While individuals use self-handicapping to cover their failure and protect self-esteem, they also try to create the delusion that they are competent (33). Self-handicapping can be either behavioral or claimed (or verbal) (18), so, self-handicapping attempts are examined under these two subheadings (19). Even though they may look different from each other, the common goal of these strategies is to protect the individual's self-efficacy and self-esteem (37).

Behavioral Self-handicapping

It is the behavior performed to affect the success of the future performance directly. This strategy is often preferred by individuals when the importance of success is high. The individual tries to protect himself from the negative effects of failure by creating reasons that will increase the probability of failure (23). For this purpose, individuals may tend to exhibit observable negative behaviors such as postponing work, spending time on non-work-related activities, and alcohol use in order to make it difficult for the current situation or the task that is expected to be done. For example; instead of striving for success, the individual may exhibit behaviors that do not help the performance to be performed, such as going fishing or shopping (37, 77, 91). In behavioral self-handicapping, the excuses that may be the reasons for a possible failure are produced voluntarily before the task is performed. In fact, the individual complicates the task with his very own efforts, because the tendency for that kind of behavior will be much more effective in persuading those who will evaluate the level of success in the performance. Behavioral self-handicapping has an effect that greatly reduces the likelihood of success (5). Here, the individual strives not to ensure failure, but to externalize it in case of a possible failure. However, this effort causes an emotional impasse because this behavior, which is applied to protect self-esteem, negatively affects the success of the individual and damages the self-image (42).

Claimed Self-handicapping

In this type of self-handicapping, the individual verbally expresses that his failure was due to the factors that affect his performance, such as environment, equipment, atmosphere, etc. Individuals who use claimed self-handicapping are prone to state that their failures are based on some factors that they are unable to control such as illness or other feelings (e.g. stress, excitement, embarrassment), the others' incompetence (e.g. teammates), or the other environmental factors (e.g. insufficient lighting) (37, 75, 81). These are expected expressions that individuals can make as excuses in case of failure, but claimed self-handicapping is different from an ordinary excuse because the individual speaks negatively about the situation he is in, and blames the environmental factors before the performance, and the tricky point is, these are told intentionally to be heard by the people to whom the individual feels himself to be responsible (73). For example, a tennis play may tend to claimed self-handicapping by expressing that he has back pain because if he fails, he will be able to say that reason for the failure was the back pain, not his incompetence (28).

Tendency for Self-handicapping

As self-handicapping is a strategy to protect self-esteem in case of a potential threat (1), individuals with a low level of self-esteem are more prone to self-handicapping (26). It was shown earlier that people with a high level of self-esteem used self-handicapping less frequently (86). Individuals, who know that their performance will be evaluated by others, tend to self-handicapping a lot (73). Individuals, who are anxious that they will not be able to succeed in some of the tasks they have to do, may either postpone their tasks or tend to self-handicapping. Postponing tasks eliminates the possibility of a mistake as there is no performance and the individual is kept away from possible negative emotions. However, the danger is that using this strategy to alleviate anxiety may become a regular defensive tool that the individual uses frequently (23).

It has been reported that individuals with low self-esteem perceive the obstacles/difficulties they may encounter while performing tasks harder than others (63). Having low self-esteem is a factor that

increases the tendency to self-handicapping (85, 86). Perfectionist individuals' self-handicapping tendencies are also higher when compared to others (38, 70, 72). Perfectionists are generally not satisfied with their performance (52), have high-stress levels (50), and have higher fear of failure (29).

Effects of Self-handicapping

When self-handicapping strategies are used rarely, no negative effect on self-image is expected, but if used frequently, problems such as embarrassment, irritability, narcissistic personality disorder, defensive pessimism, deceitful behavior, long-lasting low-level psycho-social well-being, or burnout syndrome may be experienced (4, 17, 57, 70, 91). If self-handicapping behavior becomes a personality trait, a wide range of social problems, ranging from individual exclusion to social isolation (91, 92).

Associations between Self-Handicapping and Self-Esteem

Self-esteem, which is expressed as a positive or negative attitude of the individual toward himself and how he perceives himself (71), is a subjective evaluation of an individual for his emotions (26). The relationship between self-esteem and self-handicapping is that self-handicapping behavior is used to protect self-esteem (82). Individuals want to feel that they are valuable (54), and high self-esteem levels cause the individual to perceive their self-worth as high (2). Therefore, individuals who want to maintain their self-esteem can use self-handicapping strategies whenever they feel the possibility of failure. However, there is no consensus regarding the relationship between self-esteem and self-handicapping. Although some researchers suggest that there is a positive relationship (15, 25, 63, 83), evidence of a negative relationship has also been shown (31, 53, 66, 87). In a recent study, it was reported that the relationship between self-handicapping and self-esteem is meaningful only if the self-esteem level is below the average (61).

Self-handicapping in Sports

There are many studies on self-handicapping carried out on individuals in the field of education (teachers, students, academicians) (10, 26, 30, 61, 80, 86, 90), however, studies on self-handicapping in the field of sports are limited. In this section, the studies on self-handicapping in the field of sports will be compiled and the findings will be summarized. Sports is an area of self-actualization for individuals (60) and in sports, they can try to satisfy their sense of self-worth. There are not only athletes but also coaches and referees in the field of sports. Even if these individuals of different statuses take part in the same sporting performance, their goals will be different: the athlete may want to break the record, the trainer may want to make the team a champion, and the referee to lead the match flawlessly. In sports competitions, which are success-oriented performances, regardless of their status, the aim of the athlete, coach, or referee is to show that he is successful (48). So, although performance goals are different, the common goal is to be successful.

The concept of self-handicapping can be examined as a state or trait phenomenon in sports. The trait self-handicapping approach examines whether the self-handicapping tendency has effects on psychological and behavioral variables depending on the sportive events (18). In some studies examining this approach, self-handicapping tendency was found to be negatively correlated to mood (64), perceptions about group harmony (14), time spent for preparatory training (68), and global self-esteem level (65).

In the 'state self-handicapping' approach, the factors just before the sportive performance of the individuals are examined. Studies conducted to examine this approach revealed that self-handicapping tendency is associated with the goal of avoiding performance (an avoidance goal focused on avoiding the demonstration of normative incompetence) (24) and low self-efficacy and low self-esteem (58).

Jones and Berglas (41) state that self-handicapping in the sports field can be seen in a wide range from the tennis player who tries to externalize his failure by straightening the strings of the racket after a bad hit, to the golf player who systematically avoids training by going out on the golf course. However, studies examining the self-handicapping tendencies and self-handicapping levels of individuals in the field of sports are limited. When the literature is searched, it has been observed that self-handicapping studies are generally focused on athletes, there are no studies on coaches, and the studies on referees are insufficient.

Rhodewalt et al. (68) found that swimmers with a low self-handicapping level tried hard to prepare better before an important competition, but those

with a high level of self-handicapping did not show this behavior, and these athletes went to their trainers and talked to them before all performances. Carron et al. (14), recruited a total of 221 athletes from five branches, namely rowing, cricket, water polo, and two different rugby branches in their study and it was reported that individual differences affected self-handicapping tendency, but a negative relationship was found between the harmony within the group and the level of self-handicapping. Hausenblas and Carron (34) stated that, in team sports, a high tendency to self-handicapping was not observed because self-handicapping behavior is clearly understood by the teammates, and the individuals were afraid of being excluded. Many studies have shown that the use of self-handicapping strategies can adversely affect the performance and social relations of athletes (24, 65, 69).

Coudevylle et al. (18) investigated 71 competitor basketball players' behavioral and claimed self-handicapping levels in their study and concluded that male athletes' self-handicapping tendencies were higher and the frequency of self-handicapping increased as the level of cognitive anxiety increased. However, it is known that using self-handicapping strategies may benefit some athletes in the short term (9), but this benefit will lose its effect if used in the long term (67). A striking example of the detrimental effect of self-handicapping was reported by Berglas. It has been reported that the hockey player Derek Sanderson, following the transfer that earned him the title of the most paid sportsman of his time, started to drink continuously even though he had never drunk before and he did this with the anxiety of not being able to show the performance expected of him. This self-handicapping behavior negatively affected Sanderson's performance, causing him to become an unsuccessful athlete (12).

The importance of competition affects the tendency towards self-handicapping behavior. There is a positive correlation between the importance attributed to the competition and the level of self-handicapping. In the study conducted on elite golf players, it was found that those who define the competition as "highly important" had high self-handicapping levels, and the athletes who stated the importance of the competition as "low" had a low self-handicapping tendency (55).

As a result of their work with 546 athletes in the branches of basketball, soccer, American football, volleyball, rugby, cricket, athletics, taekwondo, triathlon, orienteering, golf, swimming, water polo, gymnastics, tennis, netball, squash, shooting, archery, and field hockey, Prapavessis et al. (65) reported that athletes with high self-handicapping tendency chose emotion-centered coping strategies such as withdrawal and passive attitude and faced long-term low performance as the effect of self-handicapping.

Hofseth, Toering, and Jordet (39) reported that according to the results of their study on 589 young football players, embarrassment and guilt tendencies affected the emergence of self-handicapping behavior and as these feelings increased, the football players' tendency to self-handicapping also increased. It has also been found that those who were prone to feeling shame had a high self-handicapping tendency.

It has been shown previously by Gözmen Elmas and Aşçı (31) that fear of failure is the strongest predictor of athletes' tendency for self-handicapping. According to the results of the study carried out on 53 male judokas who have national rankings, it was determined that athletes with a high level of self-handicapping attributed the failure to external factors more and indicated that they had a minimal decrease in their perceived judo proficiency levels after the competitions they failed. Judokas with a low level of self-handicapping stated that the failure resulted from their very own performances and that their judo proficiency levels were not very good in those competitions (32). It has been shown that the tendency of athletes to self-handicapping was affected by their self-esteem level regardless of gender, and athletes with low self-esteem levels resorted to claimed self-handicapping more (28). It has been shown in many studies that self-handicapping tendency increased when athletes' abilities were revealed, such as competition or physical performance measurement, when the athlete was concerned about a possible negative evaluation due to his performance (16, 27, 32, 55, 58, 63).

Studies on disabled athletes are also very limited. In a study examining the self-handicapping levels of disabled swimmers (49), it was reported that the disability did not affect the self-handicapping tendency. However, there are also studies showing that disabled individuals have higher self-handicapping levels (6, 7, 59) but these studies were not conducted on athletes.

In general, the findings obtained from studies examining the self-handicapping levels of athletes are in accordance with the information in the literature. It is clear that, as the levels of success expected by the athletes increase, their self-handicapping levels increase, however, it is not possible to conclude that "all athletes will use self-handicapping strategies". Although there are internal factors that affect the self-handicapping behavior of athletes, external factors are also of high importance. In particular, it is obvious that athletes in team sports are less likely to tend to self-handicapping strategies compared to athletes in individual sports. It's because the athlete who will tend to self-handicapping will face social pressure that will be created by the other athletes on the team.

There are studies in the literature that examine the self-handicapping levels of not only athletes but also referees who act in the field of sports. The search on international studies examining the self-handicapping levels of the referees returned no results. It was seen that there was only one study that examined the emotional fitness levels of the referees, and this study examined the self-worth, burnout, and perceived social support levels of a total of 300 referees from soccer, swimming, and canoeing (62). As a result of the study, it was stated that the socioeconomic status of soccer referees was higher than canoe and swimming referees, but soccer referees were under high social pressure. It has also been reported that female referees had more symptoms of emotional disturbances than male referees.

The referee ruling a game must be fair and his decisions should be sound and fair. These expectations increase the pressure on the referee. In addition, the fact that his performance is instantly monitored and evaluated by external factors, such as spectators, athletes, and observers, adds extra stress on the referee (46). The referee is also stressed because he knows that he is the only person authorized to make decisions in the competition (79) and he is the person who will be criticized intensely after the competition for his in-game decisions (47). The referee can tend to self-handicapping to avoid the criticism that may come to him due to possible wrong decisions during the match or to stay away from the sanctions that may come from the referee observers (48).

Searches in Turkish literature on self-handicapping levels of referees turned out that some studies examined self-handicapping levels of soccer, badminton, curling, wave surfing, taekwondo, and wrestling referees. Examining the self-handicapping levels of the referees is important in sports competitions as the referees have critical power over the result of the game. Because the referee is the ruling person in the game and his decisions in the game cannot be discussed. This power of the referee is a factor that may affect the result of the game. However, a single wrong decision made by the referee may waste all the preparations and training done by an athlete or a team during the entire season (48). This is a great deal of stress for the referee and when the pressure created by the competition increases, referees may use self-handicapping strategies to protect their self-esteem (63).

Examining the self-handicapping levels of the referees revealed that taekwondo referees had the highest self-handicapping levels and the level was above the median value reported by Rhodewalt (66). It was understood that soccer was in the second place, but their self-handicapping levels were below the general median value and the referees in curling, badminton, wrestling, and wave surfing were followed, respectively. It has been stated that the higher self-handicapping levels of Taekwondo referees might have resulted because taekwondo was a combat sport. In addition, in taekwondo, athletes move very fast and apply many techniques in a short time. Due to the characteristics of Taekwondo, the referees' concentration levels must be higher than the other referees in order not to make mistakes and to carefully follow the positions. It has been stated that in this very fast sport, taekwondo referees may be more directed towards self-handicapping behavior to protect their self-esteem in case of a potential error (44).

In a study involving soccer referees, it was seen that the self-handicapping levels of these referees were below the general median value (48). Soccer is the most popular sport in the world (22) and more than half of the world's population is closely involved with soccer. This popularity of soccer naturally affects the behaviors of the referees both on and off the field. Soccer spectators probably know the rules of soccer well, make comments, and constantly criticize the referee's decisions. In the event of an incorrect decision, serious pressure may arise on the referee both on the field and afterward. It was reported that soccer referees tend to self-handicapping strategies in order to resist the criticism

that may come from the spectators/players and protect their self-esteem (46).

Self-handicapping levels of curling, badminton, and wrestling referees were found to be low and close to each other. Curling is a sport in which players traditionally strive to demonstrate good in-game behavior, preferring to lose over an unfair victory. In addition, the players contribute to the decisions to be made within the competition. This, in turn, reduces the stress on the referees and partially reduces the negative feelings that the referees may feel since the responsibility for decisions is not solely on the shoulders of the referee. Although the behavioral characteristics of the players make it easier for the referee to make the right decisions and make it possible to manage the game soundly, there are times that the decisions are necessary to be made by the referee. The low self-handicapping levels of curling referees are due to the philosophy of the game and the fair-play behavior of the athletes (47).

Self-handicapping levels of badminton referees were reported to be very low. Badminton is not as popular as soccer or taekwondo and has a relatively limited audience. It was concluded in the study that this situation caused the referees ruling the competition to feel more comfortable and less inclined towards self-handicapping due to less social pressure (43).

A study examining the self-handicapping levels of wrestling referees included 22 Category I (highest international) wrestling referees. The self-handicapping levels of these referees were found to be well below the average stated in the literature. Refereeing in the international arena can be a great stressor (63), but the results of the study suggested that the self-handicapping levels of wrestling referees were relatively low. It was concluded that the fact that the referees involved in that study were highly experienced (86.4% of those with 15 years and more experience) and they had to pass challenging exams and training in order to be promoted to the level of international refereeing reduces the self-handicapping tendency of international Category I wrestling referees (45).

In another study, self-handicapping levels of surfing referees were examined (46). It was reported that in wave surfing there were only 788 active athletes (78) and this is a relatively small number. In surfing, the decisions and points made by the referee affect the result of the match. In addition, when the referee decides that a surfer has committed a rule violation, it may cause that athlete to be disqualified from that stage or the entire competition. The referees may tend to self-handicapping to make a valid excuse against the technical committee, observers, or federation officials in case of a wrong decision or scoring erroneously during the competition. On the other hand, the referees' self-handicapping levels were found to be very low. It has been reported that windsurfing was not so popular, the number of athletes and spectators was limited, and the competition rules were not well known by the public. So, the referees' stress levels kept at a low level and therefore their self-handicapping levels were low.

Effects of Variables on Self-handicapping Levels

In studies examining the self-handicapping levels of individuals in the field of sports, the factors affecting the self-handicapping levels were also examined. It has been shown that the factors such as marital status, education level, monthly income level, and proficiency in a foreign language do not have significant effects on the self-handicapping levels of the referees. Only in the study examining badminton referees, it was shown that female referees' self-handicapping levels were significantly higher than male referees (43), and in taekwondo, the place of residence variable affected the self-handicapping scores (province>district) (44). When the studies conducted outside the field of sports were examined, it was seen that there was a similar situation and self-handicapping was not affected by the level of income (8), level of education (3), marital status, professional status, or years of seniority (13).

It is thought that the most important factor affecting the level of self-handicapping is gender but there is no consensus on how gender affects the level of self-handicapping. Studies report different results as some studies suggested that gender did not affect self-handicapping (13, 28, 42, 82), some studies suggested that men have higher self-handicapping levels (8, 18, 21, 36, 56), and some studies stated that women have higher self-handicapping levels (88, 89). The reason for the self-handicapping tendency of men was thought that men may tend to self-handicapping to maintain their higher social status than women (56). On the other hand, it was stated that if the determinant of success in performance was seen as the level of social competence, self-handicapping tendencies of women would be higher than men, and when the success criterion was

academic competence, men's self-handicapping tendency would be higher (21).

Conclusion

As a result of reviewing the studies on self-handicapping in the sports field, the following results have been reached:

• Self-handicapping is most associated with self-esteem. There is a negative correlation between self-esteem level and the frequency of self-handicapping behavior.

• Athletes are prone to self-handicapping when they feel threatened about their physical abilities.

• The main factor affecting the level of self-handicapping is gender. Although there is no consensus, men's self-handicapping tendencies are generally higher than women's.

• The level of self-handicapping is not affected by demographic or sociocultural variables in general.

• As the importance of the competition or performance increases, the tendency to self-handicapping increases.

• Individuals who use self-handicapping benefit from claimed or behavioral self-handicapping strategies, but claimed self-handicapping strategy is not preferred by individuals in team sports because of the risk of being excluded by their teammates.

• If self-handicapping becomes a habit, individuals experience psychological and social adaptation problems.

• Perfectionist individuals are more inclined to self-handicapping.

The research subjects and areas which have not been studied, or few studies have been done, in the field of sports on self-handicapping can be listed as follows:

• Although there are some studies on athletes, there are no studies investigating the self-handicapping levels of trainers.

• There is no study on self-handicapping behaviors of athletes comparing self-handicapping levels/behaviors before and after the games.

• There are limited studies examining the self-handicapping levels of referees in popular sports.

• Studies on the effect of disability on the level of self-handicapping and especially on the self-handicapping levels of athletes with disabilities are limited.

• Self-handicapping was found to be studied especially in education-related fields and studies are mostly carried out on academic staff, teachers, and students. It is necessary to increase the existing knowledge by carrying out more studies in the field of sports.

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