

Three Variables in the Training of Female Soccer Players: The Relationship between Psychological Skills, Mental Energy and Courage

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Abstract

This study investigated whether psychological skills played a mediating role between athletic mental energy and sports courage in training female soccer players. The study developed an original theoretical model, which was tested using the Sobel test. Mediation analyses are theoretical research designs as they aim to add new information to the literature. In the Sobel test model, sports courage was the dependent variable, athletic mental energy was the independent variable, and soccer psychological skills were the mediating variable. The sample consisted of 307 female soccer players from the women's soccer leagues of the 2021-2022 Turkish Football Federation. Data were collected using a sociodemographic characteristics questionnaire, the Soccer Psychological Skills Scale-16 (SPSS-16), the Sports Courage Scale-31 (SCS-31), and the Athletic Mental Energy Scale (AMES). This study sought answers to four hypotheses: (1) the effect of female soccer players' athletic mental energy on their psychological skills, (2) the effect of psychological skill levels on their courage levels, (3) The effect of athletic mental energy on their courage levels, and (4) the mediating effect of athletic mental energy between their psychological skills and their courage. Psychological skills affected athletic mental energy and courage positively. Athletic mental energy affected sports courage positively. Psychological skills played a mediating role between athletic mental energy and sports courage. The theoretical model was evaluated using three models and confirmed with hypotheses. Coaches and trainers should pay attention to the mental as well as physical aspects to train female soccer players. The results confirmed the theoretical model. Authorities should encourage female soccer players to engage in bold actions and inform them about the significance of athletic mental energy and psychological skills.

Keywords: Athlete training, Athletic mental energy, sports courage, Soccer psychological skill



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INTRODUCTION

Education is the process which the child's being made firstly an effective person, a qualified member of the society/nation and the world (or the universe) in which he/she lives (Toprakçı, 2012). One of the important dimensions of this quality is the physical or body of the individual. For this reason, physical education is also important within the scope of educational activities. When it comes to the body or the physical aspect of a person, the first thing that comes to mind is sports. While sport is the key to physical health (its contribution to psychology should not be forgotten), it also stands out as a game-related activity of social culture (Toprakçı, 2017). The most important key to a good quality of social life is the competence of people in their duties. Considering that this situation should also be valid for athletes, the importance of athlete training is self-understood. One of these sports is football and one of the athletes is women/female football players. Soccer has been a popular sport throughout history. It has always been important to the masses because of either positive or negative events (İmamoğlu, 2014). For ages, men have suppressed the intellectual of women and limited their lives within certain roles, such as virgin girls, mothers, housewives, etc. Therefore, women have been much less interested in soccer than men (Thomas & Mark, 2003). Some say that soccer is not suitable for women physiologically and psychologically. However, research shows that women are socially, psychologically, and physiologically capable of playing soccer (Günay & Yüce, 2001). In recent years, women have been more interested in soccer and taken part in it as players or fans. Therefore, the authorities have reorganized women's leagues and national teams. Women's soccer was added to the Olympics, making more and more women interested in it (Önver, 2002).

Athletic Mental Energy

Although "mental energy" has no clear definition, it is a concept of interest (Lieberman, 2007). It was first addressed in the nineteenth century, but it was never defined scientifically (Yıldız, 2021: 35). It is associated with considering problems, focusing on different factors, and insisting on finding a solution without being distracted. It is an essential determinant of success. Beckmann and Elbe (2015) define mental strength as one's ability to put self-regulation skills into practice to perform well even under adverse circumstances. However, there is "limited research on mental energy" (Cook and Davis, 2006). Researchers have generally addressed it together with fatigue, alertness, etc. (Lieberman, 2007) and assessed it through cognitive parameters (wakefulness, etc.) (Myers, 1923), definitions (reaction time, attention ability, memory, etc.) (Mohajeri et al., 2015; Kennedy et al., 2004; Kennedy et al., 2007), or anxiety, depression, memory, attention, and visual tests or enhanced questionnaires (Dammann et al., 2013; Kennedy et al., 2004; Fehnel et al., 2004; Kuan et al., 2017). All athletes need to have high mental energy because they need to focus during competitions and practices. They must develop attentional skills to perform excellently, have sufficient mental energy, and cope with difficulties. Attention and concentration allow athletes to filter perceptions and emotions (Sindik et al., 2015). Athletic mental energy is defined as "an athlete's perception of his/her energy state." It has cognitive, affective, and motivational components. The concepts of "vigor," "tireless" and "composed" are related to athletic mental energy. "Confidence," "motivation," and "concentration" are also the cognitive components that affect athletic performance (Lu et al., 2018). All athletes should consider mental energy because it is an important factor in athletic performance (Lykken, 2005; Lu et al., 2018; Cook & Davis, 2006; Loehr, 2005)

Psychological Skills in Soccer

Psychological skills are used to regulate the psychological state. They are based on the conscious realization of thoughts and behaviors prepared and structured by athletes and exercisers (Eklund and Tenenbaum, 2014). Psychological skills affect athletes' emotions and thoughts (Hays and Smith, 1996). Psychological skills are based on the assumption of using mental skills to increase optimal performance despite training programs. Research shows that psychological skills significantly increase competitive performance. Therefore, psychological skill training programs focus on subjects such as imagery, concentration, coping, relaxation, goal setting, cognitive self-management, and performance under pressure (Konter, 2002: 5). A good soccer player should be self-confident, determined, motivated, aggressive, ambitious, emotional, hardworking, honest, responsible, and strong. All parties (coaches, etc.) need to pay attention to these psychological characteristics to ensure that soccer players perform

better (Chyzowych, 1990). Sports force athletes physically, mentally, and psychologically. A good soccer player must perform actions under pressure, engage in combinations, know where to pick up and deliver a ball, predict positions, and surprise her opponents. Experienced coaches can easily guess whether soccer players are playing according to their own abilities or tactics. As soccer evolves, the significance of training becomes clearer because soccer is a complex sport where tactics and intelligence are combined with skills. Not accepting or ignoring this fact is self-deception. The longer a soccer player trains and practices, the more suitable her mental state will be for performance sports (Küçük, 2009: 44-45). Psychological skills training is an approach to developing mental skills. Some youth academies and football clubs employ sport psychology counselors (Nesti, 2010). Beckmann and Elbe (2015) proposed a structured psychological support training model concerning the uncertainties around sports psychology and the lack of knowledge of coaches and officials in soccer (Johnson et al., 2011) and other sports. This training model consists of three parts: basic education, skills training, and crisis intervention (Konter, et al. 2019: 180-181). Therefore, we can integrate psychological skills training into systematic and large programs. For example, Harwood (2008) developed a four-month training program and implemented the intervention in a football academy in England. The training program involved concentration, communication, control, commitment, and trust (CCCCT). What needs to be done about this training program was presented to the coaches in five 90-minute sessions. Each session should focus on one skill. After each session, coaches integrated the learned strategies into their coaching practice to teach the skills to the athletes (Konter, et al. 2019: 191). Konter and Hankin (2008) also developed a multidimensional-interactive model of soccer performance based on research findings and a dialectical approach. This model focuses on psychological skills, which is an integrated training program. In other words, the model combines technical, physical-physiological, tactical, tactical, and psychological elements or dimensions in a broad socio-cultural context. Therefore, it also contributes to performance and other outcomes. In this model, psychological skills are key elements of the training model and should be integrated into physical, technical, and tactical training sessions (Konter, et al. 2019: 191).

Sports Courage

Sports courage is a critical component in sports psychology (Lopez, 2007). Although researchers concentrate on concepts and measures of courage in different fields, few of them have researched sports courage (Konter and Ng, 2012: 165). Sports courage is a vital virtue (Konter & Toros, 2012) that has received little scientific attention from sports psychology researchers, especially soccer researchers (Corlett, 2002; Konter et al., 2013). Sports psychology focuses on different variables to maximize the performance of athletes (Castro-Sanchez et al., 2018). Sports courage is affected by many factors (fear, danger, risk, etc.). It is a dynamic process related to position, experience, and personality traits (Pury & Kowaski, 2007). Depending on social and psychological factors, sports courage significantly affects performance. Therefore, it is worth investigating the factors affecting it in more detail. The change and development of courage are too complex to have a single answer (Corlett, 1996). For example, What is the definition of sports courage? Is courage personal or situational? What are the factors that create sports courage? How important is sports courage for success and performance? Does sports courage change according to gender, age, sport type (individual or team), and athlete type (amateur and professional) (Konter, 2013: 959). Successful soccer players have different kinds of courage. For example, players who score goals, break records, and go beyond their limits will likely take more risks. They are challenged by strong opponents and face stressful situations that threaten their careers (Konter, 2013, 2015-c). Another question is whether courage is a personality trait, whether being a part of a team increases the probability of taking bold actions, and whether we can talk about something like "team courage" (Konter and Beckmann, 2019: 42). Konter's sports courage model (2013) focuses on interactions between situational factors (risks, dangers, and fear), personal dispositions (personality traits, experience, and knowledge), sports-related factors (individual and team sports, contact and non-contact sports), and risky situations (a critical penalty). In his model, sports courage is a dynamic and transformational process determined by the interactions of those factors. In Turkey, women's soccer is becoming more popular, and women are becoming more visible in every sport. Women's soccer teams compete in leagues in almost every region of Turkey. There is very little research on the sports courage model that helps us understand athletes' courage levels and performance characteristics. Besides, there are very few soccer psychology studies on female soccer players (Gledhill, et al. 2017; Gledhill & Harwood, 2014; 2015;

Konter et al. 2022). Two of those studies focus on career and performance development and related psychosocial factors in female soccer players (Gledhill & Harwood, 2014; 2015). Konter et al. (2022) examined courage and basic performance variables in female soccer players. Therefore, we need to investigate the concept of sports courage in women's soccer to understand the impact of sports courage on the performance of female soccer players.

There is "limited research on athletic mental energy" (Lu et al., 2018; Chiou et al., 2020; Yıldız et al., 2020; Yıldız, 2021; İslam 2022). There is also a relatively a small body of research on psychological skills in soccer (Konter, 2002, 2004, 2005a, 2005b, 2006, 2009, 2017; Konter et al., 2019; Sivrikaya and Ozan, 2020; İslam et al., 2021; Karagenç, 2021). Studying courage in different sports branches (soccer, wrestling, American football, skiing, students, etc.) will help us understand it better (İslam, 2022; İslam et al., 2021; İslam, 2021; Güvendi et al., 2020; Konter, et al. 2022; Konter and Beckmann, 2019; Güvendi et al., 2018; Cigrovski et al., 2018; Avşar et al., 2016). There is also limited research on sports courage. Based on all the information above, the concepts of sports courage, athletic mental energy, and psychological skills in women's soccer are important for both teams and individual athletes. These structures are critical for top performance. However, we screened international and national databases using the keywords "sports courage," "psychological skills in soccer," and "athletic mental energy" and determined that only a handful of studies addressed those structures.

This is an original study because it is the first study to address the association between athletic mental energy, psychological skills, and sports courage in female soccer players. Therefore, we can state that this study will contribute to the literature. In short, this study was based on three premises: (1) there is little research on female soccer players' sports courage; (2) There is limited research on female soccer players' athletic mental energy. (3) We do not have a very good understanding of the relationship between courage and athletic mental energy and courage and psychological skills in female soccer players. While there is a large body of research on the effectiveness of psychological training in many sports, there is limited research on the effectiveness of psychological training in soccer (Konter et al., 2019). In athlete training; we can use the concepts of sports courage, mental energy and psychological skill. Based on these basic elements, this study investigated whether psychological skills played a mediating role between mental energy and sports courage in female soccer players. Within the framework of this objective, we will be able to elicit new information to make theoretical and practical suggestions about sports courage and make sure that female soccer players are more represented in educational studies. In parallel with this idea, we think that the evaluation of the relationship between sports courage, athletic mental energy and psychological skills in female football players will contribute to their education and help us to recognize the concept of sports courage and understand their development processes. In this context, this study will pave the way for further research and contribute to the literature. Therefore, the research hypotheses are as follows:

Research Hypotheses

H₁: Athletic mental energy positively affects female soccer players' psychological skills.

H₂: Psychological skills positively affect female soccer players' courage.

H₃: Athletic mental energy positively affects female soccer players' courage.

H₄: Athletic mental energy plays a mediating role between sports courage and psychological skills in female soccer players.

METHOD

Research Model and Type

This study adopted a qualitative, correlational survey method to develop an original theoretical model to determine whether athletic mental energy played a mediating role between psychological skills and sports courage in female soccer players (Karasar, 2005). In the model, sports courage was the dependent variable, athletic mental energy was the independent variable, and psychological skill was the mediating variable. Mediation analyses that add new information to the literature are theoretical

studies. The survey method aims to describe a situation as it is or as it was in the past (Karasar, 2005, 2008). The model was assessed using the Sobel test (Sobel, 1982). A mediation model examines whether the relationship between independent and dependent variables occurs through a third variable. The Sobel test measures whether a mediating variable is significant. The Sobel test examines and interprets the relationship between dependent and independent variables by including a mediating variable in the model (Sobel, 1982, 1986; MacKinnon et al., 2002). The model in question is as follows:

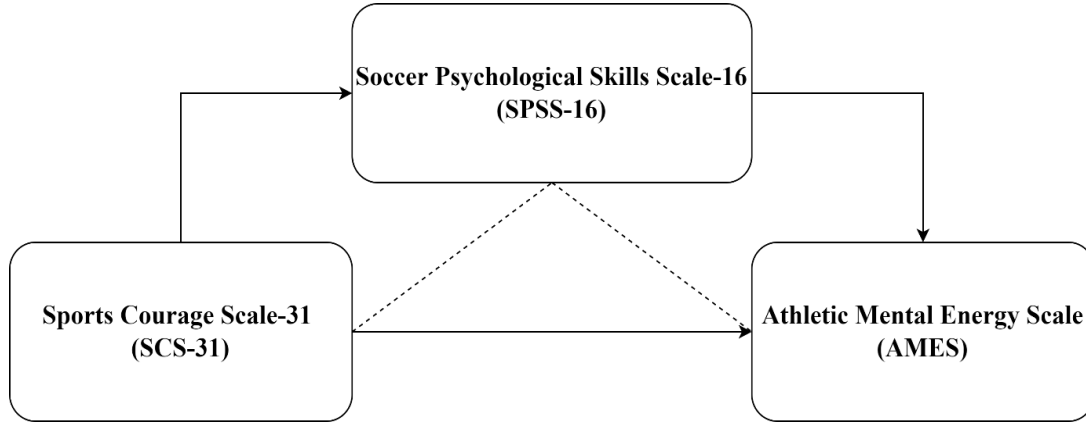


Figure 1: Sobel Test Model

Research Purpose

This study aimed to determine whether psychological skills played a mediating role between athletic mental energy and sports courage in female soccer players playing in the Super League, Soccer 2nd League, and Soccer 3rd League in the 2021-2022 season.

Population and Sample

The study population consisted of all female soccer players playing in the Women's Super League, Soccer 2nd League, Soccer 3rd League, and Amateur Leagues. Participants were recruited from KDZ Ereğli Belediyespor, Alg Spor, Trabzonspor AŞ, Çaykur Rizespor AŞ, Bitexen Sivasspor, Dudullu, Giresunspor, and İlk Adım Belediyesi (Women's Super League), Gaziantep Asya Spor, Ünye Gücü FK, and Pendik Çamlık Spor (2nd League), Rüsumat-4 Gençlik Spor, Rize Yeşilçay Spor, and Kızıltepe Spor Lisesi (3rd League), and Ege Yıldızları Gençlik ve Spor (amateur league). "A common rule of thumb for scale studies is to have a sample size five times the number of items in the scale" (Tavşancıl, 2014). Therefore, the sample consisted of 307 female soccer players.

Permissions and Informed Consent

Before the start of the study, the participants were given a detailed explanation about the purpose, content, method and design of the study (content and application of the scales). After being informed, they signed a free and Informed Consent Form that mentioned the possibility of withdrawing at any time during the study. The present study followed the ethical standards for research on human subjects set out in the Declaration of Helsinki. Moreover, the present study was approved by the ethics committee of Ordu University (No: 2023/20 & Date: 26/01/2023).

Data Collection Tools

Data were collected using a survey method. Participants were briefed about the research purpose and procedure. They were also informed that this was a scientific study from which they could withdraw at any point. The researchers answered the participants' questions as they filled out the data collection forms. The data were "collected using a sociodemographic characteristics questionnaire", the Soccer Psychological Skills Scale-16 (SPSS-16), the "Sports Courage Scale-31 (SCS-31)", and the Athletic Mental Energy Scale (AMES).

1-Sociodemographic Characteristics Questionnaire

Literature review the sociodemographic characteristics questionnaire was based on a conducted by the researcher. The questionnaire consisted of five items on category, age, position, professional experience, and the status of being a national athlete.

Table 1 shows the participants' sociodemographic characteristics. More than half the participants were younger than 18 (56%). More than a quarter of the participants were 19 to 24 years of age (33.6%). More than half of the participants had a professional experience of 6 to 11 years (61.5%). Participants were goalkeepers (12%), central defenders (36.8%), midfielders (25.7%), or strikers (25.4%). Twenty-nine participants played soccer in the amateur/regional leagues (9.4%). Sixty-one participants played soccer in the third league (19.9%). Fifty-five participants played soccer in the second league (17.9%). Sixty-four participants played soccer in the first league (20.8%). More than a quarter of the participants played soccer in the Super League (31.9%). One hundred participants were national athletes (32.6%).

Table 1: Sociodemographic Characteristics

Variable	n	%
Age (year)		
≤18	172	56.0
19-24	103	33.6
25-29	24	7.8
30-35	5	1.6
≥35	3	1.0
Professional experience (year)		
0-2	55	17.9
3-5	99	32.2
6-8	90	29.3
9-11	33	10.7
≥11	30	9.8
Position		
Goalkeeper	37	12.1
Defender	113	36.8
Midfielder	79	25.7
Striker	78	25.4
Team category		
Amateur/Regional League	29	9.4
3 rd League	61	19.9
2 nd League	55	17.9
1 st League	64	20.8
Super League	98	31.9
Being a national athlete		
Yes	100	32.6
No	207	67.4

2-Soccer Psychological Skills Scale (SPSS-16)

The "Soccer Psychological Skills Scale-16 (SPSS-16)" was developed by Konter (2009). "The instrument consists of 16 items rated on a "five-point Likert-type scale" ("1= Strongly Agree" to "5= Strongly Disagree"). The instrument has five subscales: imagery, performing under pressure, commitment, coping with stress and competitive anxiety". The scale had a Cronbach's alpha of 0.867 in this study.

3-Athletic Mental Energy Scale (AMES)

"The Athletic Mental Energy Scale (AMES) was developed" by Lu et al. (2018) and adapted to Turkish by Yıldız et al. (2020). "The instrument consists of 18 items rated on a "six-point Likert-type scale". The instrument consists of six subscales: "concentration", "vigor", "tireless," "motivation", "confidence" and "composed". The subscales of the Turkish version of the scale have a "Cronbach's alpha of 0.78 to 0.91" (Yıldız et al., 2020). The scale had a Cronbach's alpha of 0.913 in this study.

4-Sports Courage Scale (SCS-31)

The Sports Courage Scale-31 (SCS-31) was developed by Konter and Ng (2012). "The instrument consists of 31 items rated on a "five-point Likert-type scale" ("1= Strongly Agree" to "5= Strongly Disagree"). The instrument has five subscales: determination, mastery, venturesome, self-sacrifice behavior and assertiveness" (Konter & Ng, 2012: 163-172). The scale had a Cronbach's alpha of 0.955 in this study.

Data Analysis

Participants' sociodemographic characteristics were presented using frequency (n) and percent (%). The reliability of the "SPSS-16, SCS-31, and AMES" was analyzed. The relationship between the scale scores was analyzed using correlation tests. Normality was tested using the Shapiro-Wilk test. The results showed that the data were normally distributed ($p > 0.05$). "Pearson's correlation" test was used to determine the relationship between the variables. Mean () and standard deviation (SD) values were used for descriptive statistics. Analysis was performed to determine whether psychological skills (SPSS-16) played a mediating role between sports courage (SCS-31) and athletic mental energy (AMES). Three simple linear regression models were developed to test the assumptions. "In the first model", psychological skill (SPSS-16) was the dependent variable, while athletic mental energy (AMES) was the independent variable. "In the second model", sports courage (SCS-31) was the dependent variable, while psychological skill (SPSS-16) was the independent variable. "In the third model", sports courage (SCS-31) was the dependent variable, while athletic mental energy (AMES) was the independent variable. The results of the models showed that the conditions for investigating the mediating effect of psychological skills were met. In line with this, a "fourth model" was developed. In the model, psychological skills and athletic mental energy were the independent variables, while sports courage was the dependent variable. A multiple linear regression analysis was performed. The results of the fourth model showed that psychological skills played a fully mediating role between sports courage and athletic mental energy. The significance of the change in Beta values was tested to determine the validity of the full mediation effect of psychological skills (Hayes, 2013). "Sobel, Aroian, and Goodman's test statistics" evaluated the significance of the change in beta values. "In Monte Carlo simulations, the Sobel and Aroian tests yield the best results for samples larger than 49" (MacKinnon et al., 1995). The margin of error in the statistical analyses was 5%. All analyses were carried out using the R-Project program (R Core Team, 2020) and the bda (Wang, 2015) package.

RESULTS

Relationships between variables

Table 2 shows the descriptive statistics and Pearson's correlation test results of the scales.

Table 2: Pearson correlation test results

Variable	\bar{X}	SD	1	2	3
1. SCS-31	85.176	29.099	1	0.187*	0.115*
2. SPSS-16	61.661	11.537		1	0.463*
3. AMES	87.961	14.032			1

\bar{X} : Mean, SD: Standard deviation, * $p < 0.05$, SCS-31: The Sports Courage Scale-31, SPSS-16: Soccer Psychological Skills Scale (SPSS-16), AMES: The Athletic Mental Energy Scale

Participants had a mean SCS-31, SPSS-16, and AMES score of 85.176, 61.661, and 87.961, respectively. The SCS-31 score was significantly correlated with the SPSS-16 and AMES scores ($r = 0.187$, $p < 0.05$; $r = 0.115$, $p < 0.05$). There was also a positive correlation between the SPSS-16 and AMES scores ($r = 0.463$, $p < 0.05$).

Sobel Test Model

The first hypothesis "Athletic mental energy positively affects female soccer players' psychological skills" was tested using regression analysis. Table 3 shows the results.

Table 3: Simple Linear Regression Analysis (Model 1)

Variable	Beta	Std. Error	t	p
Constant	28.195	3.717	7.585	<0.001
AMES	0.380	0.042	9.116	<0.001
R	0.463			
R ²	0.214			

Beta: Coefficient, Std. Error: Standard Error, AMES: Athletic Mental Energy Scale

Table 3 shows the simple linear regression analysis where soccer psychological skill (SPSS-16) was the dependent variable, "while athletic mental energy (AMES) was the independent variable". "The results

showed that athletic mental energy significantly affected psychological skills" ($p < 0.05$). Based on these results, a one unit increase in AMES scores led to a 0.380 unit increase in SPSS-16 scores.

The second hypothesis "Psychological skills positively affect female soccer players' courage" was tested using regression analysis. Table 4 shows the results.

Table 4: Simple Linear Regression Analysis (Model 2)

Variable	Beta	Std. Error	t	p
Constant	56.041	8.899	6.298	<0.001
SPSS-16	0.473	0.142	3.331	0.001
R	0.187			
R ²	0.035			

Beta: Coefficient, Std. Error: Standard Error, SPSS-16: Soccer Psychological Skills Scale

Table 4 shows the simple linear regression analysis where sports courage (SCS-31) was the dependent variable, while psychological skill (SPSS-16) was the independent variable. The results showed that psychological skills significantly affected sports courage ($p < 0.05$). Based on these results, a one-unit increase in SPSS-16 scores led to a 0.473-unit increase in SCS-31 scores.

The third hypothesis "Athletic mental energy positively affects female soccer players' courage" was tested using regression analysis. Table 5 shows the results.

Table 5: Simple Linear Regression Analysis (Model 3)

Variable	Beta	Std. Error	t	p
Constant	64.023	10.806	5.925	<0.001
AMES	0.240	0.121	1.978	0.049
R	0.115			
R ²	0.013			

Beta: Coefficient, Std. Error: Standard Error, AMES: Athletic Mental Energy Scale

Table 5 shows the simple linear regression analysis where sports courage (SCS-31) was the dependent variable, while athletic mental energy (AMES) was the independent variable. The results showed that athletic mental energy significantly affected sports courage ($p < 0.05$). Based on these results, a one-unit increase in AMES scores led to a 0.240 unit increase in SCS-31 scores.

The fourth hypothesis "Athletic mental energy plays a mediating role between sports courage and psychological skills in female soccer players" was tested using regression analysis. Table 6 shows the results, while Table 7 shows the Sobel test values.

Table 6: Multiple Linear Regression Analysis (Model 4)

Variable	Beta	Std. Error	t	p
Constant	54.197	11.344	4.778	<0.001
AMES	0.035	0.132	0.263	0.793
SPSS-16	0.453	0.160	2.826	0.005
R	0.188			
R ²	0.035			

Beta: Coefficient, Std. Error: Standard Error, AMES: Athletic Mental Energy Scale, SPSS-16: Soccer Psychological Skills Scale

Table 6 shows the multiple linear regression analysis where soccer psychological skill (SPSS-16) was added to Model 3 as an independent variable.

The regression coefficient in Model 4 was statistically insignificant ($p > 0.05$). On the other hand, the coefficient of SPSS-16 total scores was statistically significant ($p < 0.05$). These results showed that soccer psychological skills played a fully mediating role between athletic mental energy and sports courage. However, the significance of the change in beta values is taken into account to determine whether the effect of the mediating role of soccer psychological skills is significant (Hayes, 2013).

Table 7: Sobel Test Values

Test type	Test stat.	p
Sobel	2.700	0.007
Aroian	2.685	0.007
Goodman	2.715	0.007

The results showed that the Sobel, Aroian, and Goodman test values were statistically significant ($p < 0.05$), indicating that soccer psychological skills played a fully mediating role between athletic mental energy and sports courage.

DISCUSSION AND CONCLUSION

This study investigated whether soccer psychological skills played a mediating role between athletic mental energy and sports courage in female soccer players. In recent years, “there has been a growing body of research on psychological structures” in soccer. However, there is limited research on athletic mental energy, sports courage, and soccer psychological skills. This is the first study to address those three components. Therefore, the results were discussed within the scope of the hypotheses.

The first result “showed that the SCS-31 total score was positively correlated” with the SPSS-16 ($r=0.187, p<0.05$) and AMES total scores ($r=0.115, p<0.05$). There was also a positive correlation between the SPSS-16 and AMES total scores ($r=0.463, p<0.05$). The result indicated that sports courage positively affected psychological skills and athletic mental energy. Therefore, we can state that self-confidence and determination affect female soccer players’ concentration and motivation and allow them to perform well under imagery, stress, and pressure. Our results are consistent with the literature (Güvendi, et al., 2018; Islam, 2021; Yıldız, 2021; Islam, et al., 2021; Konter, 2021-a, 2021-b; Konter, et al. 2022).

The second result “showed that athletic mental energy significantly affected soccer psychological skills” ($p<0.05$), indicating that athletic mental energy predicts female soccer players’ psychological skills. This result confirmed Hypothesis I. In the last three decades, international soccer has become more complex (Rampinini et al., 2007). Physical, technical, and tactical competence is necessary to win in soccer, but they are not sufficient for success. For maximum performance during competitions, soccer players need to apply advanced psychological skills, such as imagination, competitive anxiety, and optimal performance even under adverse conditions (Konter et al., 2019: 179). Motivation, confidence, and concentration positively affect female soccer players’ psychological skills. Developing different psychological skills makes sense in soccer players playing in different positions (Konter et al., 2019: 182). Yıldız (2021) also “reported a positive correlation between athletic mental energy and soccer psychological skills”. However, more research is warranted to better understand the impact of athletic mental energy on soccer psychological skills.

The third result showed that soccer psychological skills significantly affected sports courage ($p<0.05$), suggesting that psychological skills make female soccer players more courageous. This result confirmed Hypothesis II. Female soccer players with psychological skills, such as imagery, stress, competitive anxiety, and optimal performance, are more likely to be determined, assertive, and courageous during competitions. Soccer players who are brave to take action despite risks do not give up until they reach their goals (Konter and Beckmann, 2019: 40). We can state that this is similar to the sport-related risk factors in the sports courage model proposed by Konter (2013). Konter (2015-a) found that children with higher SCS-31 “mastery” subscale scores were likely to perceive success more positively. Konter et al. (2022) reported the relationship between mastery and age and courage. Islam (2022) found that “wrestling athletes’ attitudes toward wrestling affected their athletic mental energy”. Our results are consistent with the literature (Beckmann and Nash, 2018; Konter and Beckmann, 2019; Islam, 2021).

The fourth result showed that athletic mental energy affected sports courage positively ($p<0.05$), confirming Hypothesis III. Athletic mental energy makes female soccer players more confident and motivated, resulting in higher performance. This is consistent with Konter’s model of sports courage (2013) (Konter and Beckmann, 2019: 43). Confident and concentrated female soccer players are determined and bold risk-takers. Hidrus et al. (2017) found a significant relationship between courage and athletic coping skills, suggesting that soccer players with more courage are better at coping with stress. Islam (2022) reported that wrestling athletes’ athletic mental energy affected their courage. Our results are consistent with the literature (Yıldız, 2021). Konter et al. (2022) found that female soccer players became less courageous as they moved from amateur to professional.

The fifth result showed that soccer psychological skills played a fully mediating role between athletic mental energy and sports courage, confirming Hypothesis IV. Self-confident and determined female soccer players who take risks are more likely to concentrate on competitions and perform better in the face of imagery, stress, and competitive anxiety. Soccer is a global industry where psychological structures are critical. Soccer players who score goals, break records, and go beyond their limits are likely

to take more risks. They are challenged by strong opponents and face stressful situations that threaten their careers (Konter, 2013, 2015-b). However, more research is warranted on team courage (Konter and Beckmann, 2019). Positive aspects are important in team cohesion and collective competitions (commitment, social identity, focus, etc.). Commitment, satisfaction, and team dynamics significantly impact leading players. However, little is still known about the mechanisms by which this effect occurs (Cotterill & Fransen, 2016; Konter and Beckmann, 2019: 42). This is consistent with the sport-related factors (contact and non-contact sports and individual and team sports), situational factors (risks, dangers, and fears), and risky situations (a critical penalty in the last second of the game) in the model of sports courage proposed by Konter (2013) (Konter & Beckmann, 2019: 43). It is important to set group goals because it can activate team spirit and bring a sense of "us" to the team (Burton, 1993). Advanced technical and tactical competencies are no longer sufficient for success in soccer. High performance depends on advanced psychological skills under adverse conditions during competitions. Although soccer teams have recognized how important psychological skills are, only a few offer psychological skill training. Teams do not see sports psychological services as an integral part of training and competitions. They resort to psychological services only when they face multiple defeats and run the risk of dropping from the league (Konter et al., 2019). Konter et al. (2022) found that more courageous female soccer players might get injured more often. Based on this information, it can be concluded that sport-related psychological factors have an impact on athletes' emotional states in relation to their courage. In this respect, we can talk about the possible influence of athletic mental energy on sports courage and psychological skills in soccer. Therefore, our results are consistent with the literature. Islam (2022) observed that wrestlers' athletic mental energy played a fully mediating role between their attitudes toward wrestling and sports courage. Our results are consistent with the literature (Omar-Fauzee, et al., 2010; Thelwell et al., 2008; Islam, 2021; Konter, 2017; Konter & Beckmann, 2019; Yıldız, 2021). Our results indicate that psychological skills play a mediating role between sports courage and athletic mental energy in female soccer players. In conclusion, the theoretical model was evaluated using three models based on the data and confirmed by the hypotheses. Therefore, our results show the effects of courage and athletic mental energy on female soccer players' psychological skills. Our results are a reflection of the cycle in the model. Therefore, this study provides a rational argument for the discourses. The direction and effect level of the mediating role will shed light on future studies. Authorities should inform female soccer players about athletic mental energy, sports courage, and soccer psychological skills and provide them with appropriate settings where they can develop these components. Therefore, our study indicated the effects of the training of the proposed psychological variables on high-level performance. Coaches and trainers need to pay attention to the development of female soccer players in terms of physical as well as psychological and mental training.

SUGGESTIONS

Although there is a large body of research on the effectiveness of psychological training in many sports, there is limited research on athletic mental energy and the effectiveness of psychological training in soccer (Nesti, 2010; Konter et al., 2019: 180; Yıldız, 2021:1). Courage has received little scientific attention from sports psychology researchers, especially soccer researchers (Corlett, 2002; Konter et al., 2013; Konter and Beckmann, 2019: 38). Therefore, this study developed an original theoretical model to evaluate whether athletic mental energy played a mediating role between sports courage and psychological skills. The sample is large enough to represent the women's soccer leagues of the 2021-2022 Turkish Football Federation (TFF). We think that this study contributes to the literature. The original theoretical model brings a new breath to the literature because there are very few studies on mediating variables in sports sciences. Researchers who address the concepts that interact with sports courage and athletic mental energy will contribute to the literature with different applications and designs. Further studies should address the limitations of our model. Researchers should reconstruct our results with other applications and designs.

However, we could not analyze the psychological variables qualitatively for three reasons. First, such research would take too much time. Second, it would be difficult to get permission from soccer teams due to the COVID-19 pandemic. Third, soccer players would be unwilling to participate due to the pandemic.

Future studies should focus on coaches because the psychological structure is especially important in the case of relegation or defeat (Apitzsch, 2006). In addition, coaches resist psychological skill training because they know little about it. Therefore, authorities should ensure that coaches and managers know more about courage and its significance in modern soccer (Konter et al., 2019; Konter & Beckmann, 2019: 46).

Coaches should promote bold actions in female soccer players. They should perform practice related to changes in their mood during competitions. Coaches should also raise their awareness of courage because soccer players have to develop a collective form of these psychological factors to achieve maximum performance during competitions. Coaches and managers should also offer opportunities to young soccer players to help them develop courage. Trainers and coaches should be informed about the importance of psychological skill training (Freitas et al., 2013; Heaney, 2006; Konter et al., 2019: 180). For example, the German Football Federation has made psychological skill training compulsory for young soccer players (Konter et al., 2019: 193). Researchers should recruit different samples to investigate the mediating role of psychological skills between athletic mental energy and sports courage.

Kadın Futbolcuların Eğitiminde Üç Değişken: Psikolojik Beceri, Zihinsel Enerji ve Cesaret Düzeyi İlişkisi

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Özet

Araştırmada, kadın futbolcuların eğitiminde atletik zihinsel enerjileri ve sporda cesaret düzeyleri ile arasındaki ilişkide futbolda psikolojik becerilerin aracılık etkisinin olup olmadığı belirlemek amacıyla özgün teorik bir model kurulmuş ve bu model de Sobel testi ile değerlendirilmiştir. Alanyazına yeni bilgiler katmayı amaçlayan aracılık çözümleri kuramsal araştırma niteliğindedir. Oluşturulan sobel test modelinde kadın futbolcuların sporda cesaret ölçeği bağımlı değişken, atletik zihinsel enerji ölçeği bağımsız değişken ve futbolda psikolojik beceriler ölçeği de aracı değişken olarak belirlenmiştir. Araştırmaya 2021-22 Türkiye Futbol Federasyonu'nun belirlediği kadın futbol liglerinde oynayan 307 kadın futbolcu katılmıştır. Veri toplama aracı olarak, kişisel bilgiler formu, "Profesyonel Futbolcularda Psikolojik Beceriler Ölçeği-16 (SPSS-16)", "Sporda Cesaret Ölçeği-31 (SCS-31)" ile "Atletik Zihinsel Enerji Ölçeği (AMES)" kullanılmıştır. Araştırmada kadın futbolcuların atletik zihinsel enerjilerinin onların psikolojik becerilerine etki düzeyleri, psikolojik beceri düzeylerinin onların cesaret düzeylerini nasıl etki ettiği, atletik zihinsel enerjileri onların cesaret düzeylerini yaptığı etkiyi ve son olarak da atletik zihinsel enerjileri onların psikolojik becerileri ile cesaretlerini arasında aracılık etkisine sebep olup olmadığı hipotezlerine çözüm aranmıştır. Araştırma sonucunda, kadın futbolcuların atletik zihinsel enerjilerinin psikolojik beceri düzeylerini pozitif yönlü, psikolojik becerilerinin cesaret düzeylerini olumlu olarak, atletik zihinsel enerjileri onların cesaretleri olumlu yönde ve son olarak da kadın futbolcuların psikolojik becerileri onların cesaret ve atletik zihinsel enerjileri arasında tam aracılık etkisinin olduğu belirlenmiştir. Araştırma için önerilen teorik model doğrulanmıştır. Araştırma için önerilen teorik model edinilen verilerle kurulan üç farklı model ile değerlendirilmiş ve hipotezler ile de doğrulanmıştır. Kadın futbolcuların eğitiminde özellikle altyapılarda fiziksel eğitimin yanı sıra mental eğitim ile birlikte psikolojik ve zihinsel gelişimlerine dikkat edilmesi gerekmektedir. Kadın futbolcuların cesur hareketler desteklenmeli, cesur davranışların onların müsabaka esnasındaki atletik zihinsel enerjileri ve psikolojik becerileri ile ilişkili uygulamalar yapılarak farkındalık düzeyleri artırılması önerilebilir.

Anahtar Kelimeler: Sporcu eğitimi, Atletik zihinsel enerji, Futbolda psikolojik Beceri, Sporda cesaret



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Genişletilmiş Özet

Problem: Eğitim, bireyin içinde yaşadığı toplum/ulus ve dünya için etkili bir insan, nitelikli bir birey haline getirilmesi sürecidir (Toprakçı, 2012). Bu niteliğin önemli boyutlarından biri de bireyin fiziksel yani bedendir. Bu nedenle eğitim faaliyetlerinin kapsamında beden eğitimi de önemlidir. Beden ya da insanın fiziksel yönü dendiğinde de ilk akla gelen spordur. Spor, bedensel sağlığın (psikolojiye katkısı da unutulmamalıdır) anahtarı olmakla birlikte aynı zamanda toplumsal kültürün oyun bağlamı bir faaliyeti olarak da ön plana çıkmaktadır (Toprakçı, 2017). Toplumsal yaşamın nitelikli olmasındaki en önemli anahtar her görevdeki insanın işinin ehli olmasıdır. Bu durumun sporcular için de geçerli olması gerektiği göz önüne alındığında, sporcuların eğitiminin önemini hatırlatmaktadır. Bu sporlardan biri futbol ve sporculardan biri de kadın futbolculardır. Futbolcuların eğitiminde onların özellikleri (psikolojileri, enerjileri vb.) ön plana çıkmaktadır. Alanyazın incelendiğinde atletik zihinsel enerji ile ilgili birkaç çalışmanın Lu, vd. (2018), Chiou, vd. (2020), Yıldız, vd. (2020), Yıldız vd. (2021), İslam (2022) ve psikolojik beceri ile ilgili çalışmaların (Konter, 2002, 2004, 2005a, 2005b, 2006, 2009, 2017), Konter, vd. 2019, Sivrikaya ve Ozan, 2020, İslam, vd. 2021; Karagenc, 2021; Konter, vd. 2019) olduğu görülebilmektedir. Sporda cesaret kavramının farklı spor alanlarında (futbol, güreş, amerikan futbolu, kayak, öğrenciler vb.) araştırılması (İslam (2022); İslam, vd. 2021; İslam, 2021; Güvendi, vd. 2020; Konter, vd. (2022); Konter and Beckmann, 2019; Güvendi, vd. 2018; Cigrovski, vd. 2018; Avşar, vd. 2016) sporda cesaretin daha iyi anlaşılmasını ve öğrenilmesine katkı sunmaktadır. Genel olarak futbol ve kadın futbolunda, özellikle onların eğitiminde, hem takım hem de sporcu özelinde zihinsel enerji, cesaret ve psikolojik beceri kavramları önemlidir. Üst düzey performansta önemli olan bu kavramların anlaşılabilmesi amacıyla araştırmalara duyulan ihtiyaç sebebiyle yola çıkılan bu araştırmada uluslararası ve ulusal veri tabanları "sporda cesaret", "futbolda psikolojik beceri" ve "atletik zihinsel enerji" kelimeleri ile taranmış olup, özellikle bu üç kavramı birleştirmeyi hedefleyen yeterli düzeyde araştırmanın olmadığı fikrine ulaşılmıştır. Dolayısıyla kadın futbolcularda psikolojik becerilerin zihinsel enerji ile sportif cesaret arasında aracı bir rol oynayıp oynamadığı ortaya çıkarmak bu araştırmanın amacını oluşturmaktadır. Bu amaç çerçevesinde sporcu eğitiminde, sporda cesaret ile ilgili teorik ve pratik önerilere varmak amacıyla hem uygulanabilecek yeni bilgiler ortaya çıkarılabilecek hem de kadın futbolcular ile ilgili futbolda mental çalışmaların ortaya çıkmasına katkı sağlanabilecektir. Bu fikir paralelinde sporda cesaret kavramını tanımak ve sporda cesaretin gelişim süreçlerini anlayabilmek açısından atletik zihinsel enerji ile futbolda psikolojik becerinin kadın futbolcular örnekleminde değerlendirilmesinin spor eğitime katkı getireceği de düşünülmüştür.

Yöntem: Araştırma evreni Türkiye Futbol Federasyonu'nun (TFF) 2021-2022 futbol sezonunda belirlemiş olduğu 14 bölge (TFF, 2022) içerisinde yer alan Kadınlar Süper Ligi, 2. Futbol Ligi ve 3. Futbol Lig ve Amatör liglerinde mücadele eden kadın futbol takımlarından oluşmaktadır. Örneklem grubunu ise Kadınlar Süper Ligden; KDZ Ereğli Belediyespor, Alg Spor, Trabzonspor AŞ, Çaykur Rizespor AŞ, Bitexen Sivasspor, Dudullu, Giresunspor, İlk Adım Belediyesi, 2. Ligden; Gaziantep Asya Spor, Ünye Gücü FK, Pendik Çamlık Spor, 3. Ligden; Rüsumat-4 Gençlik Spor, Rize Yeşilçay Spor ve Kızıltepe Spor Lisesi ve Amatör ligden Ege Yıldızları Gençlik ve Spor kadın futbol takımları oluşturmaktadır.

Futbolda Psikolojik Beceriler Ölçeği: Konter'in, (2009)'da geliştirdiği "Profesyonel Futbolcularda Psikolojik Beceriler Ölçeği-16 (PFPBÖ-16)" 16 madde ve 5 alt faktörden oluşan 5'li tipik bir Likerttir. (1=Tamamen katılıyorum, 5=Kesinlikle katılmıyorum) "İmgeleme" (Madde 1-6-11-16, a=0,66), "Baskı altında doruk performans ortaya koyma" (Madde 3-8-13, a=0,73), "Bağılılık gösterme" (Madde 2-7-12, a=0,62), "Stresle başa çıkma" (Madde 4-9-14, a=0,68), "Karşılaşma kaygısını yönetme" (Madde 5-10-15, a=0,63) boyutlarından oluşmaktadır. Bu çalışma verilerinden elde edilen sonuçlara göre, ölçeğin Cronbach alpha değeri 0.867 olarak belirlenmiştir.

İlk olarak kadın futbolcuların demografik özelliklerine yönelik yapılan frekans analizleri sunulmuştur. Frekans analizi sonuçları gruplara ait yüzde (%) ve frekans (f) değerleri birlikte verilmiştir. Ayrıca SCS-31, SPSS-16 ve AMES ölçeklerine ait Cronbach Alfa güvenilirlik analizi sonuçları gösterilmiştir. İkinci aşamada SCS-31, SPSS-16 ve AMES değişkenleri arasındaki ilişkiler incelenmiştir. Bu aşamada en uygun hipotez testine karar verebilmek için değişkenlerin normal dağılım varsayımına uygunlukları Shapiro-Wilk testine göre incelenmiş ve değişkenlerin normal dağılıma uygun olduğu görülmüştür (p>0.05). Bu sonuç ışığında, değişkenler arasındaki ilişki Pearson Korelasyon testi ile değerlendirilmiştir.

Korelasyon testi ile birlikte, değişkenlerin tanımlayıcı istatistiklerinden olan ortalama (\bar{X}) ve standart sapma (SS) değerleri birlikte sunulmuştur. Son aşamada ise SPSS-16 değişkenin SCS-31 ile AMES arasındaki ilişkide aracılık rolü incelenmiştir. New York Columbia Üniversitesinden 'Michael Sobel'in çalışmalarına dayanan Sobel testi, istatistik literatüründe aracı etkisinin anlamlılığının test etmek için kullanılan bir yöntemdir (Sobel, 1982, 1986). Aracılık modelinde, bağımsız değişken ve bağımlı değişken arasındaki ilişki üçüncü bir değişken aracılığıyla modele dahil edilerek, ortaya çıkan dolaylı etki hipotezlerine dökülerek incelenip yorumlanmaktadır. Modele aracı değişken eklendikten sonra bağımsız değişkendeki etkinin düşüşün anlamlı olup olmadığını ve aracılık etkisinin anlamlılığını test etmektedir (Sobel, 1982, 1986; MacKinnon, vd. 2002).

Bulgular: Tanımlayıcı istatistik bulguları incelendiğinde, kadın futbolcuların spor cesaretleri ölçeği toplam puan ortalamaları 85.176, futbolda psikolojik beceriler ölçeği toplam puan ortalamaları 61.661 ve atletik zihinsel enerji ölçeği toplam puan ortalamaları ise 87.961 olarak bulunmuştur. Pearson korelasyon testi sonuçları değerlendirildiğinde, kadın futbolcuların spor cesaretleri ölçeği toplam puanları ile futbolda psikolojik beceriler ölçeği toplam puanları ve atletik zihinsel enerji ölçeği toplam puanları arasında pozitif yönde düşük düzeyde bir ilişki olduğu ve ilişkinin istatistiksel olarak anlamlı olduğu görülmektedir ($r=0.187$, $p<0.05$; $r=0.115$, $p<0.05$). Ayrıca kadın futbolcuların futbolda psikolojik beceriler ölçeği toplam puanları ile atletik zihinsel enerji ölçeği toplam puanları arasında pozitif yönde orta düzeyde bir ilişki olduğu ve ilişkinin istatistiksel olarak anlamlı olduğu saptanmıştır ($r=0.463$, $p<0.05$).

Araştırmaya katılan kadın futbolcuların, futbolda psikolojik beceriler ölçeği toplam puanları bağımlı ve atletik zihinsel enerji ölçeği toplam puanları ise bağımsız değişken olarak kullanıldığı regresyon analizi sonuçları, kadın futbolcuların, atletik zihinsel enerji ölçeği toplam puanlarının futbolda psikolojik beceriler ölçeği toplam puanlarını istatistiksel olarak anlamlı düzeyde etkilediği saptanmıştır ($p<0.05$).

Araştırmamızda elde ettiğimiz bulgular sonucunda, kadın futbolcuların maksimum performans gösterebilmek için sporda cesaret ve atletik zihinsel enerjinin futbolculara sağladığı katkılarının yanında futbolda psikolojik becerilerinin de sportif performansa aracılık etkisinin olduğu ortaya çıkmıştır. Sonuç olarak araştırmada kurulan teorik model, edinilen verilerle kurulan üç farklı model ile değerlendirilmiş ve hipotezler ile de doğrulanmıştır. Dolayısıyla araştırma sonuçlarımız, kadın futbolcularda cesaret ve atletik zihinsel enerjinin onların psikolojik becerileri üzerine olan etkileride kanıtları ile gösterilmiştir. Araştırma sonuçlarımızın bu belirttiğimiz modelde ortaya konan döngünün yansıması olduğu söylenebilir. Dolayısıyla araştırmamız belirtilen bu söylemlere rasyonel bir argüman olarak ifade edilebilir. Aracılık rolünün yönü ve etki düzeyi sonraki çalışmalara ışık tutacaktır. Futbolda atletik zihinsel enerji, sporda cesaret ve futbolda psikolojik beceriler ilgili psikolojik faktörler hakkında, kadın futbolcuların bilgi sahibi olmaları sağlanmalı ve aynı zamanda bu psikolojik yapıların sportif performans açısından geliştirilmesine yönelik uygun zemin oluşturulmalıdır.

Öneriler: Araştırmamızın futbol takımlarının antrenörlere yönelik olarak bir benzeri yapılabilir. Çünkü küme düşme ya da hezimete uğrama durumunda, özellikle psikolojik yapıları uygulamak gerekliliği düşünülmektedir (Apitzsch, 2006). Ayrıca antrenörler tarafından psikolojik beceri eğitim konusunda bir direnç ve bilgi eksikliği varlığının belirlendiği, spor cesaretinin ve onun modern futboldaki önemi ile ilgili olarak antrenörler ve yöneticilerin daha fazla bilgi sahibi olmalarının sağlanması gerekmektedir (Konter, vd. 2019; Konter and Beckmann, 2019: 46).

Kadın futbolculardaki cesur hareketler desteklenmeli, cesur davranışların onların müsabaka esnasındaki duygu durumlarındaki değişikliklerle ilişkili uygulamalar yapılarak ve farkındalık düzeyleri artırılması önerilebilir. Çünkü sportif performansta maksimum düzeyde verim sağlamak amacıyla futbolcuların rekabet içerisinde açıklanan bu psikolojik faktörlerden oluşan kolektif bir formunu bu yapı içerisinde ortaya çıkarabileceklerdir. Futbolda psikolojik beceri eğitimi ve spor cesareti alt yaş gruplarındaki programlarda uygulanabilir. Freitas, vd. (2013); Heaney (2006); Konter, vd. (2019: 180) psikolojik beceri eğitimi hakkında bilgi sağlanmasını ve antrenörlerin eğitimindeki gerekliliği bildirmişlerdir. Örneğin futbolda psikolojik beceri eğitimini, Alman Futbol Federasyonu alt yaş kategorilerinde eğitim programlarında zorunlu olarak uyguladıkları görülmektedir (Konter, vd. 2019: 193). Araştırma farklı örneklem grupların da atletik zihinsel enerji, sporda cesaret ve psikolojik beceri eğitimi ile ilgili aracı değişken olarak daha fazla araştırma yapılmasıyla birlikte literatüre daha fazla katkı sağlayacağı söylenebilir.

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