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Research Article / Araştırma Makalesi

Comparison of anxiety status, social support, and coping mechanisms among football players and American football players

Futbolcular ve Amerikan futbolcularında anksiyete düzeyleri, sosyal destek ve stresle başa çıkma yöntemlerinin karşılaştırılması

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ABSTRACT

Objective: We aimed to assess the differences of psychological factors among football players and American football players.

Methods: A total of 68 players (34 American football players and 34 football players) were investigated. Data of players (age, height, body weight, body mass index, marital status, sports experience), and their answers to State-Trait Anxiety Inventory (STAI), Multidimensional Scale of Perceived Social Support (MSPSS) and Athletic Coping Skills Inventory-28 (ACSI-28) were collected.

Results: Height, body weight and body mass index values of American football players were significantly higher than football players (p=0.033; p<0.001; p<0.001, respectively). The rate of being married of football players was significantly higher than American football players (p=0.021). Sports history of football players was significantly higher than American football players (p<0.001). The state anxiety level of American football players is significantly lower than football players (p<0.001), and total scores for social support (p=0.038), coping with adversity (p=0.013), coachability (p<0.001), concentration (p=0.002), and confidence and achievement motivation subscales (p=0.005) were significantly higher than football players.

Conclusion: The psychological state of the athletes, their ability to cope with stressful conditions and the social support they receive may differ among sports branches. Therefore, considering the differences between the athletes in different sport branches may contribute when planning appropriate interventions for mental health programs.

Keywords: *Sports type, sports psychology, anxiety, coping, social support*

ÖZ

Amaç: Futbolcular ve Amerikan futbolcuları arasında psikolojik faktörler açısından farklılıkların olup olmadığının değerlendirilmesi amaçlandı.

Yöntem: Toplam 68 sporcu (34 Amerikan futbolcusu ve 34 futbolcu) incelendi. Oyuncuların verileri (yaş, boy, vücut ağırlığı, vücut kütle indeksi, medeni durum, spor geçmişi) ve Durumluk-Sürekli Kaygı Envanteri (STAI), Çok Boyutlu Algılanan Sosyal Destek Ölçeği (MSPSS) ve Atletik Başa Çıkma Becerileri Envanteri-28'e (ACSI-28) verdikleri yanıtlar toplandı.

Bulgular: Amerikan futbolcularının boy, ağırlık ve vücut kitle endeksi değerleri futbolculardan anlamlı olarak daha yüksekti (sırasıyla, p=0.033; p<0.001; p<0.001). Futbolcuların evli olma oranı, Amerikan futbolcularından anlamlı olarak daha yüksekti (p=0.021). Futbolcuların spor geçmişi Amerikan futbolcularından anlamlı olarak daha yüksekti (p<0.001). Durumluk kaygı düzeyleri Amerikan futbolcularında futbolculardan daha düşük (p<0.001), sosyal destek (p=0.038), zorluklarla başa çıkma (p=0.013), konsantrasyon (p=0.002), antrene edilmeye uyumluluk (p<0.001) ile özgüven ve başarma motivasyonu alt ölçekleri (p=0.005) futbolculardan anlamlı olarak daha yüksekti.

Sonuç: Sporcuların psikolojik durumları, stresli koşullarla baş etme becerileri ve gördükleri sosyal destek spor branşları arasında farklılık gösterebilmektedir. Bu nedenle mental sağlık programlarına yönelik uygun girişimler planlanırken farklı spor branş sporcuları arasındaki farklılıkların dikkate alınması katkı sağlayacaktır.

Anahtar Sözcükler: *Spor branşı, spor psikolojisi, anksiyete, başa çıkma, sosyal destek*

INTRODUCTION

As the coordinator of an athlete's overall healthcare, the sports medicine specialist works to provide a convenient arena for the athlete to produce high level performance while avoiding possible injuries, thereby achieving athletic success. Therefore, identifying the factors that affect athletic success is one of the major considerations of a sports medicine specialist in daily practice (from the sports medicine specialist's perspective). Considering that athletic performance and health resides at the foundation of athletic success, early research mostly centred on external factors

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(i.e. surface, weather conditions, equipment, type of sport, other competing athletes, etc.) and internal factors (i.e. physiological, biomechanical, etc.).

With recent research, evidence indicating that psychological factors have significant effects not only on prevention of injuries but also on return to sports has become more prominent (1). Moreover, sports performance both affects and is affected by the psychological status of athletes, which suggests a two-way relationship between them (2). Based on this knowledge, more recent and well-designed approaches are being adopted, and understanding the importance of evaluating the psychological factors of athletes has earned widespread value in the athletic health and performance community.

Previous research reveals different aspects of the mental health of athletes. While physical activity was shown to improve mental health, and reduce the rate of depression and anxiety (3,4), a number of factors could increase athletes' susceptibility to certain mental health disorders (5-7). To explain the effects of psychological factors on athletes, different models were proposed. A most widely known model is the stress injury model, which was proposed by Andersen and Williams (8), and most of the research in the literature laid the foundations for this model. According to their model, personality traits, history of stressors and coping resources are the main determinants of the athlete's psychology. Additionally, the factors influencing mental health of athletes include, but are not limited to; gender, physical and mental demands, academic, financial, social, family status, and pressures of increased public attention, which vary among different sports types (7). Determining the factors that affect an athlete's mental health will ensure the development of approaches to reduce their sports injuries and increase their performance. Therefore, we aimed to investigate the differences in athlete mental health status, and their individual and social resources for coping with stressful conditions in two different sports branches of football and American football.

MATERIAL and METHODS

This study was planned as a retrospective study. Survey data for the athletes was obtained from archive records of Ege University Sports Medicine Department, Türkiye. Three common questionnaires that evaluate mental health status and coping skills of athletes were previously collected as parts of independent studies. For American football players, survey data was collected from 34 players between the ages of 18-25 years, and all the data was used in the current study. For football players, data from the same questionnaires was available for a total of 82 football players between the ages of 18-36. To investigate the same age group, data from 40 of these 82 players who were between the ages of 18-25 years was used.

Data was collected from both sport groups during the off-season periods of their sports leagues, and participants from both groups were not in the exam periods of their academic year. Written permission was obtained from the unit where the archive data is located. Both authors of the current study had collected the data and contributed to the previous studies. The study was approved by Kayseri City Training and Research Hospital Clinical Research Ethical Committee (Decision No. 751, dated 06.12.2022). Anthropometric data including age, weight, height, body mass index (BMI); sports type, sports age and scores for the three questionnaires were collected from the archive. The questionnaires were the State-Trait Anxiety Inventory (STAI), Athletic Coping Skills Inventory-28 (ACSI-28), and Multidimensional Scale of Perceived Social Support (MSPSS).

Questionnaires

State-Trait Anxiety Inventory (STAI): The inventory was developed by Spielberger et al., and includes a total of 40 items consisting of two subscales (state and trait) with 20 questions each to evaluate anxiety levels (9). State items describe how the athlete currently feels when they are answering the items on the questionnaire. Trait items describe the general anxiety level of the athlete. Individuals rate each statement on a 4-point Likert scale from 1 (not at all) to 4 (completely).The final scores for state and trait scales give the total for 20 items. The total score obtained from both scales varies between 20-80 and higher scores indicate higher anxiety levels. STAI was adapted to Turkish, and Cronbach-alpha coefficient was found to be between 0.83-0.87 for trait items and between 0.94-0.96 for state items (10).

Athletic Coping Skills Inventory-28 (ACSI-28): The inventory was developed by Smith et al., and includes 28 items and seven sub-dimensions (coping with adversity, coachability, concentration, confidence and achievement motivation, goal setting and mental preparation, peaking under pressure, freedom from worry) to evaluate the coping skills of athletes (11). Each sub-dimension includes four items. Individuals rate each statement on a 4-point Likert scale. Except for items numbered 3,7,10,12,19 and 23, items are scored using this numerical scale: 0: almost never, 1: sometimes, 2: often, and 3: almost always. Items numbered 3,7,10,12,19 and 23 are scored using another numerical scale: 0: almost always, 1: often, 2: sometimes, and 3: almost never. Each sub-dimension score varies between 0 to 12, and the final score varies between 0-84. Higher score indicates that the athlete has better psychological skills. ACSI-28 was adapted

to Turkish, and the reliability coefficient of the scale was 0.85 (12).

Multidimensional Scale of Perceived Social Support (MSPSS): The scale was developed by Zimet et al. (13), and includes 12 items that subjectively evaluate the adequacy of social support from three different resources (family, friends and a significant other). Individuals rate each statement on a 7-point Likert scale from 1 (definitely no) to 7 (definitely yes). The total score for the scale is obtained by summing all subscale scores. Higher scores indicate high perceived support, and lower scores indicate lack of support. MSPSS was adapted to Turkish, and the Cronbach alpha coefficient was found to be 0.89 (14).

Statistical Analysis

The SPSS statistical software package v26.0 for Windows (SPSS Inc, Chicago, Illinois) was used for statistical analysis. Normality of data distribution was tested with the Shapiro-Wilk test. Values are presented as percentage and mean ± standard deviation. The Mann-Whitney U test was used for nonparametric numeric data analysis. The Student *t* test was used for parametric numeric data analysis. Categorical variables were analysed with the chi-square test. Statistical significance level was set to 0.05.

RESULTS

Body compositions of participants were significantly different among groups. American football players were significantly taller (p=0.033), heavier (p<0.001), and had higher BMI (p<0.001). Marital status of players was significantly different between players (married: 26.5% for football players, 5.9% for American footballers, p=0.021). Football players were significantly more experienced in their sport than American football players (p<0.001) (Table 1).

Table 1. Characteristics of participants

Parameter	Football players (n=34)	American football players(n=34)	p value
Age (yr)[a]	21.6 ± 2.0 (18-25)	21.2 ± 2.3 (18-25)	0.442
Height (cm)[b]	178.6 ± 5.0 (167-194)	182.0 ± 6.4 (172-196)	0.033*
Weight (kg)[a]	75.6 ± 5.1 (64.0-90.0)	91.3 ± 19.3 (66.2-125.4)	<0.001**
BMI (kg/m^2)[b]	22.7 ± 0.7 (21.4-23.9)	27.6 ± 5.6 (19.4-39.5)	<0.001**
Marital status (%, married/total)[c]	26.5% (n=9)	5.9% (n=2)	0.021*
Experience in sports(yr)[a]	7.2 ± 2.0 (4-11)	3.0 ± 1.7 (1-7)	<0.001**

Values as mean ± SD (minimum-maximum); [a]: analyzed with Kruskal-Wallis test; [b]: analyzed with Student's t-test; [c]: analyzed with Chi square test; *: p<0.05; **: p<0.01.

State anxiety scores of football players was significantly higher than American football players (p<0.001). American football players had significantly higher scores than football players for MSPSS total score (p=0.038), and 'significant other' subscale score (p=0.002), which indicates that American football players had higher total social support and social support from someone significant (Table 2).

Table 2. Anxiety, social support and coping resources among players

Scale	Football players (n=34)	American football players (n=34)	p value
State[a]	43.3 ± 14.2 (29-75)	29.0 ± 6.7 (20-43)	<0.001**
Trait[b]	43.5 ± 12.6 (28-70)	38.0 ± 7.4 (26-55)	0.154
MSPSS (total)[a]	5.4 ± 1.2 (0.0-6.3)	5.8 ± 1.4 (1.2-7.0)	0.038*
Family[a]	6.4 ± 0.6 (5.0-7.0)	6.0 ± 1.4 (1.3-7.0)	0.677
Friends[a]	6.2 ± 0.5 (5.3-7.0)	5.8 ± 1.6 (1.0-7.0)	0.931
Other[a]	3.7 ± 2.2 (1.0-6.8)	5.4 ± 1.9 (1.0-7.0)	0.002*
ACSI-28[a]	56.1 ± 13.7 (33-74)	61.2 ± 12.1 (35-84)	0.199
Coping with adversity[b]	6.8 ± 2.6 (0-12)	8.6 ± 2.4 (2-12)	0.013*
Coachability[a]	7.5 ± 2.8 (0-11)	10.5 ± 1.6 (6-12)	<0.001**
Concentration[a]	6.6 ± 2.2 (0-10)	8.5 ± 2.6 (2-12)	0.002*
Confidence & achievement motivation[a]	8.5 ± 2.4 (0-11)	10.0 ± 1.9 (5-12)	0.005*
Goal setting and mental preparation[a]	7.3 ± 2.6 (0-11)	8.7 ± 2.8 (2-12)	0.060
Peaking under pressure[b]	6.8 ± 2.7 (0-12)	7.5 ± 2.9 (2-12)	0.359
Freedom from worry[b]	7.0 ± 3.3 (0-12)	7.4 ± 2.3 (2-12)	0.541

Values as mean ± SD (s minimum-maximum); [a]: analyzed with Kruskal-Wallis test; [b]: analyzed with Student's t-test; *: p<0.05; **: p<0.01.

American football players had significantly higher coping skill scores than football players in coping with adversity (p=0.013), coachability (p<0.001), concentration (p=0.002), and confidence and achievement motivation subscales (p=0.005) (Table 2). No other significant differences were found between the groups (p>0.05).

DISCUSSION

We investigated anxiety status and resources to cope with stress conditions among football and American football players. The main findings of the study revealed that there are several differences in anxiety levels, social support levels, and coping skills between players in different sport branches.

Perceiving a confronted situation as stressful depends on the individuals' assessment of whether they can meet the demands of the situation with their mental and physical resources (15). There were several different characteristics for football and American football players that may cause them to perceive different levels of stress. Most American football players were college student athletes, while football players were professionals. In the college period, a variety of life events occur for many young adults, such as leaving home and establishing a new life away from the parents, adapting into new social environments and new cities, confronting challenging academic requirements, and having financial concerns in sustaining their daily personal needs. Also being athletes means these young adults are confronted by additional performance issues, such as winning competitions, maintaining appropriate relationships with trainers, or being on track in terms of training and diet routines (16). Therefore, student athletes may be expected to confront challenging conditions not only for being students, but also for being athletes, and thus feel overwhelmed (17).

However, anxiety levels of American football players were lower comparing to the football players. There are several possible factors that may lead to this difference. Firstly, for football players, the sport also provides income to maintain their families' livings. However, most American football players were amateur student athletes, building their sports careers for recreational and social purposes. Therefore, sports may have a different place in the lives of athletes in different sport branches, and may have led to different anxiety levels. Moreover, since the level of sports is different between these two groups, American football players are not expected to face pressure in terms of public appearance, fame or media comments, to the extent that football players are (18). Secondly, considering that anxiety levels were different for state anxiety, athletes may perceive competitions differently. For some players, injury risk is an important factor that may increase the level of anxiety. Especially if there is a risk of suffering from a time loss injury, the player will not only miss games involuntarily, but also their financial conditions will be negatively affected (1).

In our study, football players were mostly making their living from their professional football careers. However, most American football players were students, and practicing the sport for recreational purposes, meaning that they were not earning any money from sports. Therefore, they may perceive sports as a method to avoid stress, but football players may perceive it as a source of stress. Thirdly, in accordance with the physical demands of different sports branches, physical characteristics of players were different. American football players were taller, heavier, and had higher BMI than their football player peers, categorizing them as endo-mesomorphic (19), while footballers were mesomorphic (20). Their physical characteristics were consistent with similar study groups (in terms of age, ethnicity, and competition level) for football (21,22) and American football players (23,24). Footballers may be challenged to stay lean and fit, thus may follow a stricter diet plan compared with American football players. Leanness, diet and perceived body image may increase the stress of athletes (7), this may have caused higher anxiety levels in football players. Therefore, socio-economic and perception differences between the branches might have led to different anxiety scores.

For social support, both groups had MSPSS total scores higher than 5.1, suggesting that both groups had high social support (13). For subscales, only 'significant other' was significantly higher for American football players. The frequency of football players being married was significantly higher than for American football players. Therefore, footballers classified their partners more as 'family'; while for American footballers their partners were classified as 'significant others'. This may have led football players to see more people as their families compared to American football players. Thus, fewer people remain as 'significant others' compared with American football players. In our findings, although it was not statistically significant, family support of football players was higher than in American footbal players, which supports these suggestions.

Although the ACSI-28 total scores were similar for the groups, subscale scores were higher in favour of American football players. Since athletes' coping strategy may vary depending on the individual's perception of stress (15), these differences may be explained by our findings about the higher level of anxiety in football players, which may have challenged their coping mechanisms. It is expected that coping skills will improve as the athletes get older (25,26). However, it is not clear whether this effect is due to getting older or increasing sports experience. In our study, both players were in a similar age category, while the sports experience of football players was higher than their counterparts. Therefore, it can be said that not only increasing age, but also sports experience should be considered when evalu-

atingcoping skills. Increases in experience may improve coping when performing the same task. On the other hand, what happens when the difficulty of the task also increases in accordance with the demands of increased experience? This may be an exciting question to investigate in future research.

Autonomy-supportive coaching describes techniques that coaches use to train and motivate their athletes to increase athletic development, and make better choices by supporting athletes to have more control over their sporting lives (27). It can be achieved by athletes gaining experience and creating correct expectations about themselves (28). Considering that American football players were less experienced in our study, they may need more controlling behaviours of their coaches for autonomy-supportive coaching. Meanwhile, for more experienced football players, their coaches can choose between autonomy-supportive or control behaviours, depending on which suits the situation better. Therefore, lower coachability scores may not always indicate a negative situation. On the other hand, lower coachability may be due to the football players being more experienced and therefore considering themselves as having more authority over their decisions than their coaches.

This study is not without limitations. The sample size was small, included only male players and demographic differences existed between the two groups. However, it was a retrospective study. If additional participants were added, the new data set would be collected in different conditions and distort homogeneity. Therefore we used all of the available data in the archive records. Additionally, American football is still in its infancy in Türkiye, while football has been the most popular sport for decades. This indicates that American football players, coaches, families, physicians and other stakeholders are less experienced than those related to football.

Competition level differences between groups is another important limitation of our study. As American football is in an early age in Türkiye, this means that the scientific knowledge behind this less popular and newly developing sport is still lacking. Since determining the factors that affect an athlete's mental health will enable the medical staff to develop appropriate approaches to provide prevention of undesired outcomes, and to increase the performance and rehabilitation regimes for these athletes, we analyzed the available data in the archives, and compared the most popular sport in our country (football) with this newly developing sport (American football), to reveal possible differences among them. Considering the abovementioned reasons, we suggest that this study will increase the awareness and knowledge of the different aspects of this newly developing sport in Türkiye. Considering these limitations, our findings should be interpreted carefully. Consequently, further confirmation of these results must be obtained in larger and more diverse populations, even including female athletes.

CONCLUSION

The present study demonstrated that there are differences in mental health status and resources for coping with stressful conditions among American football and football players in Türkiye. Football players had higher anxiety, while American football players had higher social support and coping resources. These differences between sport types will contribute to our knowledge of mental health. The varying competitiveness level and current conditions in sport types should also be considered when developing appropriate mental health interventions.

Ethics Committee Approval / Etik Komite Onayı

The approval for this study was obtained from Kayseri City Training and Research Hospital Clinical Research Ethical Committee (Decision No. 751, dated 06.12.2022).

Conflict of Interest / Çıkar Çatışması

The authors declared no conflicts of interest with respect to authorship and/or publication of the article.

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Author Contributions / Yazar Katkıları

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