

EXAMINATION OF SPORTS INJURY ANXIETY LEVEL AND SPORTS INJURY PREVENTION AWARENESS OF UNIVERSITY STUDENTS PARTICIPATING IN SPORTS

Spora Katılan Üniversite Öğrencilerinin Spor Yaralanması Kaygı Düzeyi Ve Spor Yaralanmasını Önleme Farkındalıklarının İncelenmesi

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Abstract

Background: Athletes, regardless of their sport, are likely to encounter numerous injury-related experiences throughout their active sporting careers. These experiences can lead to anxiety about sports injuries. Therefore, raising awareness about sports injury prevention is crucial. This study aimed to evaluate and compare anxiety levels regarding sports injuries and sports injury prevention awareness among university students from different academic disciplines who engage in regular physical activity and sport.

Methods: The study included 126 university students who participated in sports. Data were collected using a Personal Information Form, the Sports Injury Anxiety Scale (SIAS), and the Sports Injury Prevention Awareness Scale (SIPAS).

Results: No significant differences were found in the total SIAS and SIPAS scores among students from three different faculties ($p > 0.05$). However, a significant difference was observed in the Anxiety of Losing Ability (ALA) subscale of the SIAS between students from the three faculties ($p < 0.05$). Pairwise comparisons revealed a significant difference between students from the health sciences and medical faculties in the SIAS-ALA subscale ($p = 0.001$).

Conclusion: University students from all three faculties demonstrated normal levels of anxiety about sports injuries and high levels of sports injury prevention awareness. The high level of awareness among these students may play a significant role in preventing injuries. Additionally, the low levels of anxiety observed could be associated with this heightened awareness.

Keywords: Anxiety, Injury, Sports, Sporting injuries, University

Özet:

Amaç: Sporcular, hangi sporu yaparlarsa yapsınlar, aktif spor kariyerleri boyunca çok sayıda yaralanmayla karşılaşma olasılıkları yüksektir. Bu deneyimler spor yaralanmaları konusunda kaygıya yol açabilir. Bu nedenle, spor yaralanmalarının önlenmesi konusunda farkındalık yaratmak çok önemlidir. Bu çalışma, düzenli fiziksel aktivite ve spor yapan farklı akademik disiplinlerden üniversite öğrencileri arasında spor yaralanmaları ve spor yaralanmalarının önlenmesi konusunda farkındalık düzeylerini değerlendirmeyi ve karşılaştırmayı amaçlamaktadır.

Yöntemler: Çalışmaya spor yapan 126 üniversite öğrencisi dahil edildi. Veriler Kişisel Bilgi Formu, Spor Yaralanması Kaygı Ölçeği (SYKÖ) ve Spor Yaralanması Önleme Farkındalık Ölçeği (SYÖFÖ) kullanılarak toplandı.

Sonuçlar: Üç farklı fakültedeki öğrenciler arasında toplam SYKÖ ve SYÖFÖ puanlarında anlamlı bir fark bulunmadı ($p > 0,05$). Ancak, üç fakültedeki öğrenciler arasında SYKÖ'nün "Yetenek Kaybı Kaygısı" (YKK) alt ölçeğinde anlamlı bir fark gözlemlendi ($p < 0,05$). Çiftler arası karşılaştırmalar, sağlık bilimleri ve tıp fakültesi öğrencileri arasında SYKÖ-YKK alt ölçeğinde önemli bir fark olduğunu ortaya koydu ($p = 0,001$).

Sonuç: Her üç fakültedeki üniversite öğrencileri spor yaralanmaları konusunda normal düzeyde kaygı ve yüksek düzeyde spor yaralanması önleme farkındalığı gösterdi. Bu öğrenciler arasındaki yüksek düzeyde farkındalık, yaralanmaları önlemede önemli bir rol oynayabilir. Ek olarak, gözlemlenen düşük düzeyde kaygı, bu artan farkındalıkla ilişkili olabilir.

Anahtar kelimeler: Kaygı, Yaralanma, Spor, Spor yaralanmaları, Üniversite

1. Introduction

Sports activities, which are essential for the physical and mental development of children and young people, should be conducted properly and tailored to their developmental stages (Nery, Sequeira, Neto and Rosado, 2023; Çiçek, 2019). Regardless of the sport, athletes are likely to experience various injuries throughout their active careers. Such injuries may compel individuals to pause their sports activities or even bring their athletic careers to a close. Most sports injuries occur during matches, and it has been reported that the likelihood of injury is associated with the duration of match play (Celebi & Aksu, 2018).

A history of sports injuries can cause anxiety in athletes (Unver, Simsek, Islamoglu, & Arslan, 2020). Examining this state of anxiety is believed to benefit athletes, coaches, and sports administrators (Bayındır, 2021). Anxiety plays a significant role in various processes related to sports injuries (Ford, Ildefonso, Jones, & Arvinen-Barrow, 2017). Notably, it is well-documented that an athlete's anxiety about re-injury can hinder their return to sports. Among groups unable to return, factors such as re-injury anxiety, lack of confidence, insufficient time, and career changes have been identified as significant contributors (Patel, Sabharwal, Hadley, Blanchard, & Church, 2019). Additionally, it has been reported that athletes who experience physical anxiety, a lack of self-confidence, and a fear of re-injury tend to exhibit greater discipline and awareness during the recovery process (Turgut, 2023). Furthermore, injury-related anxiety has been shown to be higher in contact sports. Individuals participating in sports may experience injuries due to personal factors such as inadequate cooling routines or overloading (Turker et al., 2011). These emphasize the importance of adopting personal protective measures to prevent sports injuries.

This study aimed to assess the concerns of university students engaged in sports across various dimensions related to sports injuries, including anxiety about losing ability, anxiety about pain and suffering, and anxiety about losing social support. Additionally, the study evaluated students' awareness of injury prevention measures to minimize sports injuries and promote prevention strategies. This approach is based on the idea that reduced anxiety during sports activities may lead to fewer injuries. A review of the literature revealed a lack of studies investigating both the sports injury anxiety levels and sports injury prevention awareness of university students involved in sports.

2. Methods

This research was designed as a cross-sectional study. The level of sports injury anxiety was assessed using the SIAS, while awareness of sports injury prevention was measured with the SIPAS. The study protocol is registered on ClinicalTrials.gov (Registration Number: NCT06766344)

2.1. Participants and Sample

The study was conducted on university students participating in various sports branches, especially volleyball, basketball, soccer, swimming, fitness, pilates, walking. A total of 126 volunteer university students who regularly participated in sports were included in the study. Individuals with a history of chronic diseases or consistent medication use were removed from the study, and those who did not complete the survey questions required for the study were not considered for inclusion

In the power analysis conducted to determine the sample size, the Type I error was set at 0.05, and the Type II error was set at 0.2. The statistical power was determined as 0.8. Power analysis was performed using the G-Power 3.1.7 package (Heinrich-Heine-University, Düsseldorf, Germany) The minimum number of subjects to be included in the study in each group was determined as 18 in order to find a mean difference of three units significant according to the Sports Injury Anxiety Scale sub-dimension score.

2.2. Data Collection

The research data was conducted between 26.06.2023- 10.09.2023 on university students participating in sports branches at Inonu University Faculty of Sports Sciences, Faculty of Health Sciences and Faculty of Medicine. To inquire about the participants' demographic details, sports injury anxiety level and injury prevention awareness, the case report form was prepared online by the researchers through Google Forms and administered to the participants during the initial phase of the research process.

2.2.1. Personal Information Form

In the form, the social and demographic attributes of the participants (age, gender, height, weight, faculty student, sport branch, frequency of sports, how long they do sports per week, history of injury and surgery, if any) were questioned with 10 questions.

2.2.2. Sports Injury Anxiety Scale (SIAS)

The Turkish validity and reliability study of their thoughts about sports injury and their anxiety levels was conducted with the SIAS conducted by Caz et al. (2019) (Caz, Kayhan, & Bardakci, 2019). The scale consists of 19 items in total. It consists of sub-dimensions such as loss of ability, suffering, perceived weakness, loss of social support, disappointment, and anxiety about re-injury. A 5-point Likert scale was used in the evaluation. The survey questions were answered as "1=Strongly Disagree" and "5=Strongly Agree". The minimum score achievable on the scale is 19, while the maximum score is 95. In the study, the cronbach's alpha reliability coefficient of the sports injury anxiety scale was found to be 87. (Caz, Kayhan, & Bardakci, 2019). Sociodemographic information was obtained through a specially designed questionnaire consisting of 10 items, which captured key variables such as age, gender, anthropometric measurements (height and weight), academic discipline, type of sport regularly performed, frequency and average weekly duration of sport participation, as well as any prior history of musculoskeletal injuries or surgical procedures.

2.2.3. Sports Injury Prevention Awareness Scale (SIPAS)

The knowledge levels of the participants about sports injuries and prevention of sports injuries were evaluated with the SIPAS developed by Ercan and Önal in 2021 (Ercan & Onal, 2021). It consists of 18 items in total. Sub-dimensions in the scale; personal health status is examined with items 1 to 4, related to environmental factors and equipment; items 5 to 9, related to the exercise session; items 10 to 14, associated with the exercise program; and items 15 to 18. A 5-point Likert scale was used in the evaluation. Survey questions were answered as "1=Strongly Disagree", "2=Disagree", "3=Undecided", "4=Agree", "5=Strongly Agree"(Ercan & Onal, 2021).

2.3. Ethical approval

Written consent was acquired from Inonu University Faculties of Sport Sciences, Health Sciences and Medicine, and ethical clearance was received from Inonu University Health Sciences Non-Interventional Committee on Clinical Research Ethics with the number 2023/4696 from the session dated 06.06.2023. The research was carried out in accordance with the tenets of the Declaration of Helsinki. The participants were notified of the aim and details of the study and informed permission was obtained.

2.4. Statistical Analysis

The Shapiro-Wilk test was applied to assess the normality of the data. Since the normality assumption was not satisfied, the Kruskal-Wallis H test was employed for numerical data and the Chi-square test for categorical data. Post hoc analysis (Dunn's test) was conducted for pairwise comparisons of groups with significant differences.



3. Results

There was no difference between the students from the faculties of Sport Sciences, Health Sciences and Medicine in terms of age, BMI, frequency of practicing sports and duration of practicing sports ($p > 0.05$, Table 1).

Table 1. Comparison of demographic characteristics students form different faculties

Variables	Faculty of Sport Sciences (n=45)		Faculty of Health Sciences (n=41)		Faculty of Medicine (n=40)		Kruskal-Wallis H Test and p value
	x ± sd	med (min –max)	x ± sd	med (min –max)	x ± sd	med (min –max)	
Age (Years)	22.29 ± 0.45	22 (18-31)	21.88 ± 0.39	22 (19-35)	22.48 ± 0.31	22 (19-26)	2.829 0.243
BMI (kg/m ²)	22.56 ± 1.81	22.64 (17.69-31.46)	22.43 ± 0.44	21.91 (18.65-29.59)	23.35 ± 0.53	22.80 (17.86-34.85)	1.489 0.475
Variable	n	%	n	%	n	%	Chi-Square test and p value
Frequency of practicing sports (days/week)							
Less than 3 days	20	44.4	13	31.7	14	35.0	$\chi^2=7.654$ $p=0.105$
3-5 days	20	44.4	27	65.9	19	47.5	
Every day	5	11.1	1	2.4	7	17.5	
Duration of sport (hours/week)							
1-5 hour	27	60.0	24	58.5	25	62.5	$\chi^2=1.347$ $p=0.853$
6- 10 hour	15	33.3	15	36.6	11	27.5	
11-15 hour	3	6.7	2	4.9	4	10.0	

x: Main, sd: Standard Deviation, BMI: Body Mass Index, n: Number of participants %: Percent

There was no difference between the students from sports sciences, health sciences and medicine faculties in terms of the total scores of the SIAS and SIPAS ($p > 0.05$). It was found that a significant difference existed between the students of the 3 faculties in terms of the SIAS-ALA. ($p < 0.05$, Table 2)

Table 2. Comparison of the faculties in terms of the scales and sub-parameters of the SIAS and SIPAS

Variables	Faculty of Sport Sciences	Faculty of Health Sciences	Faculty of Medicine	Kruskal-Wallis H Test
	x ± sd	x ± sd	x ± sd	
SIAS	49.71 ± 2.01	47.10 ± 1.50	51.75 ± 1.65	4.652
SIAS ALA	7.64 ± 0,37	6.95 ± 0.30	8.57 ± 0,26	13,992
SIAS ABPW	5.75 ± 0,49	4.87 ± 0,33	5.17 ± 0,43	0.958

SIAS SA	10.22 ± 0,39	9.78 ± 0,38	10.97 ± 0,36	4.136
SIAS DA	7.22 ± 0,44	6.80 ± 0,48	7.00 ± 0,43	0.713
SIAS LSSA	5.93 ± 0,43	5.73 ± 0,42	5.85 ± 0,44	0.138
SIAS RA	12.93 ± 0,54	12.95 ± 0,53	14.17 ± 0,51	5.710
SIPAS	79.07±0.98	76.37±1.75	77.30±1.51	1.323
SIPAS PHS	18.04 ± 0,27	16.70 ± 0,47	17.27 ± 0,37	5.302
SIPAS EFE	22.26 ± 0,33	21.82 ± 0,53	22.07 ± 0,42	0.176
SIPAS ES	21.40 ± 0,37	20.51 ± 0,52	20.32 ± 0,54	3.160
SIPAS EP	17.35 ± 0,31	17.31 ± 0,43	17.62 ± 0,44	1.939

x: Mean, sd: Standard Deviation, BMI: Body Mass Index, n: Number of participants, SIAS: Sports Injury Anxiety Scale, AALA: Anxiety of Losing Ability, ABPW: Anxiety of Being Perceived as Weak, SA: Suffering Anxiety, DA: Disappointment Anxiety, LSSA: Loss of Social Support Anxiety, RA: Reinjury Anxiety, SIPAS: Sports Injury Prevention Awareness Scale, PHS: Personal Health Status, EFE: Environmental Factors and Equipment, ES: Exercise Session, EP: Exercise Program

In pairwise comparisons between the groups, there was a significant difference between the students of the Faculty of Health Sciences and the Faculty of Medicine in the sub-heading Anxiety of Losing Ability in the Sports Injury Anxiety Scale ($p=0.001$, Table 3).

Table 3. Pairwise Comparison of the faculty

Groups	Anxiety of Losing Ability	
	Test Statistic	P Value
Faculty of Health Sciences -Faculty of Sports Sciences	11,148	0.458
Faculty of Health Sciences- Faculty of Medicine	-29,715	0,001
Faculty of Sport Sciences – Faculty of Medicine	-18,567	0,054

$p<0,005$; Post Hoc Test (Bonferroni Dunn's test)

4. Discussion

This study aimed to determine the level of anxiety regarding sports injuries and the awareness of sports injury prevention among university students participating in sports, as well as to compare students from different academic disciplines in terms of these parameters. While no significant differences were found in the total scores for anxiety related to sports injuries and awareness of injury prevention between students from the Faculty of Sports Sciences, Faculty of Health Sciences, and Faculty of Medicine, it was observed that the SIAS-ALA subscore was higher among students from the Faculty of Medicine compared to those from the Faculty of Health Sciences. This may be due to the more detailed education that medical faculty students receive on rehabilitation processes following sports injuries, in contrast to their counterparts in the Faculty of Health Sciences.

In a study evaluating the anxiety levels of university students, a total of 321 individuals, including 209 males and 112 females from various sports disciplines, were included. The anxiety levels were assessed using the SIAS. Significant differences were found between the sub-dimensions of the scale and variables such as smoking, age, gender, and physical activity. The study concluded that the level of sports injury anxiety among these individuals was low. This may be attributed to the period of exam preparation and the desire to pursue higher education (Arıkan & Cimen, 2020). Another study, the injury anxiety levels of athletes from different sports disciplines in university teams were examined. A total of 791 individuals, including 321 women and 470 men, participated. The anxiety levels were evaluated using the SIAS. The results indicated that while the anxiety levels of men and women were similar, there were differences in the anxiety levels between athletes from different sports disciplines. It was concluded that gender and sport played a significant role in determining athletes' anxiety levels (Unver, Simsek, Islamoglu, & Arslan, 2020). There was no difference in the scores of the SIAS between the students participating in sports from the faculties of Sport Sciences, Health Sciences and Medicine ($p>0.05$). The anxiety levels of these students were normal and the sports injury anxiety levels of the individuals were found to be similar between the faculties. This may be due to the fact that the group constituting our research sample was studying health or sports-related departments. Studies conducted in other faculties unrelated to health and sports could clarify this issue and contribute to the literature. Additionally, we believe that the anxiety levels observed in this study are normal, given the high awareness of protection from sports injuries.

A study involving 3,562 sports students found that the preference to engage in sports was influenced by factors such as parental education level, income status, and the location where sports activities took place. Additionally, nutritional habits were identified as a contributing factor to sports injuries (Yucel, Kilic, Korkmaz, & Goral, 2020). Another study, which included 339 extreme athletes, investigated the relationship between sports injury anxiety and decision-making styles. The results indicated that variables such as gender, education level, and marital status significantly affected both anxiety levels and decision-making styles. It was also reported that education played a role in both fear of sports injuries and re-injury anxiety (Senel, Ozkan, Arman, & Bingol, 2023).

In a study conducted in 2023, involving 150 paragliding athletes, it was found that the anxiety level of female athletes was higher, and self-confidence decreased as anxiety increased. The study highlighted that anxiety related to sports injuries can have a significant impact on athletes and underscored the importance of taking preventive measures. (Bahadir, Osman, & Keziban, 2023). No statistically significant difference was found in the SIPAS scores between students from the Faculties of Sports Sciences, Health Sciences, and Medicine ($p>0.05$). Although no significant differences were observed between faculties, it was concluded that students from all three faculties demonstrated a high level of awareness regarding sports injury prevention. We believe that the high awareness observed among these students may be attributed to their studies in health and sports-related departments. Additionally, considering the social environment within their university, it is reasonable to assume that their awareness of sports injuries is elevated.

When examining studies related to awareness, one study focused on sports specific to female athletes and methods of protection against injuries in these sports. The review shows that female athletes generally carry a higher risk of lower extremity musculoskeletal injuries compared to male athletes. Based on the findings, it was recommended that the volume of relevant educational units be increased and preventive programs be integrated into daily practice, taking into account the differences in the etiology of injuries among female athletes (Ercan & Onal, 2021).

5. Conclusions

It was observed that students participating in sports from the faculties of sports sciences, health sciences and medicine had normal levels of anxiety about sports injuries and these students had high levels of awareness of sports injuries. Among the faculties examined, a remarkable difference was observed among the students of the Faculty of Health Sciences and the Faculty of Medicine in the sub-heading of the Sports Injury Anxiety Scale, no significant difference was found between the anxiety levels and awareness in the other pairwise comparisons. Anxiety about losing their ability was higher in the students of the Faculty of Medicine than in the students of the Faculty of Health Sciences.

Clinical Implications: The study aimed to determine the level of injury anxiety and awareness of sports injuries in students participating in sports, and it is important in terms of comparing the students of the faculties of medicine and health sciences, who do not practice sports as a profession and therefore do not receive systematic training on injury, with the students of the faculty of sports sciences who will practice sports as a profession. However, it was seen that the awareness of protection from sports injuries was high in all 3 faculties. In order to further increase their awareness, it is extremely important to provide and encourage activities such as injury awareness training to be given to students participating in sports in order for young people to love sports and participate safely. We think that our study raises awareness at this point.

Limitations: The weaknesses of our study include the fact that it could not be conducted with more students including more faculties and that the sample of the study did not include professional athletes.

Strengths of our study: According to the current literature, there is no study examining the sports injury anxiety level and sports injury prevention awareness of university students participating in sports. For this purpose, our study will provide a new perspective to the literature. In addition, our study was conducted in faculties related to sports and health, and the level of sports injury anxiety and awareness of protection from injuries of these faculties were examined. In this sense, it is a study that can be a reference for future studies.

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References

- Arikan, G., & Çimen, E. (2020). Investigation of the anxiety levels regarding sports injuries among university candidates. *Eurasian Research in Sport Science*, 5(2), 118-127.
- Bahadır, Z., Osman, Y., & Keziban, Y. (2023). The relationship between thrill-seeking behavior, injury anxiety, and self-confidence in paragliders. *Sportive*, 6(2), 1-17.
- Bayındır, O. (2021). Investigation of sports injury anxiety levels in elite young wrestlers. Hitit University.
- Caz, C., Kayhan, R. F., & Bardakçı, S. (2019). Adaptation of the Sports Injury Anxiety Scale to Turkish: Validity and reliability study. *Turkish Journal of Sports Medicine*, 54(1).
- Çelebi, M. M., & Aksu, A. (2018). Incidence of injuries in female and male volleyball players prospective preliminary study. *Spor Hekimliği Dergisi*, 53(3), 109-115.
- Çiçek, E. D. (2019). Investigation of university students' participation in sports and their attitudes toward sports: The case of Adana province. Aksaray University Social Sciences Institute.

- Ercan, S., & Önal, Ö. (2021). Development, validity, and reliability of the Sports Injury Prevention Awareness Scale. *Spor Hekimliği Dergisi*, 56(3), 138-145.
- Ford, J. L., Ildefonso, K., Jones, M. L., & Arvinen-Barrow, M. (2017). Sport-related anxiety: Current insights. *Open Access Journal of Sports Medicine*, 2017, 205-212.
- Nery, M., Sequeira, I., Neto, C., & Rosado, A. (2023). Movement, play, and games—An essay about youth sports and its benefits for human development. Paper presented at the Healthcare.
- Patel, N. K., Sabharwal, S., Hadley, C., Blanchard, E., & Church, S. (2019). Factors affecting return to sport following hamstrings anterior cruciate ligament reconstruction in non-elite athletes. *European Journal of Orthopaedic Surgery & Traumatology*, 29, 1771-1779.
- Senel, Ö., Özkan, Z., Arman, N., & Bingöl, M. (2023). Investigation of the sports injury anxiety levels and decision-making styles of extreme sports athletes. *Akdeniz Sport Sciences Journal*, 6(1-Centennial Special Issue), 532-547.
- Tanyeri, L. (2019). Investigation of injury anxiety in athletes from different sports branches. *OPUS International Journal of Society Researches*, 13(19), 577-591.
- Turgut, C. (2023). Investigation of the anxieties of handball players who have experienced shoulder injuries: A situational analysis. *Inönü University Journal of Physical Education and Sports Sciences*, 10(1), 32-48.
- Türker, T., Koçak, N., İstanbulluoğlu, H., Yıldırım, A. O., Kır, T., Açıkel, C., & Kılıç, S. (2011). Evaluation of sports habits and sports injuries among medical students. *Gülhane Medical Journal*, 53(2), 94-98.
- Ünver, Ş., Şimşek, E., İslamoğlu, İ., & Arslan, H. (2020). Investigation of injury anxiety levels among athletes in university teams. *Journal of Physical Education and Sports Sciences*, 14(3), 400-410.
- Yücel, A. S., Kılıç, B., Korkmaz, M., & Göral, K. (2020). Investigation of sports preferences of children who play sports and factors affecting them. *Eurasian Research in Sport Science*, 5(2), 118-127.