

Investigation of Sports Science Students' Awareness of Sports Injury Prevention

Spor Bilimleri Öğrencilerinin Spor Yaralanmalarından Korunma Farkındalığının İncelenmesi

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Abstract

The study aimed to determine the injury prevention awareness of sports sciences students and to examine its relationship with variables such as age, gender, sports discipline, years of sports experience, injury history, treatment status, injury region, and injury type. A quantitative descriptive survey design was used with 364 undergraduate students (137 females, 227 males) enrolled in sports sciences programs in İzmir during the 2023–2024 academic year. Awareness was assessed using the "Sports Injury Prevention Awareness Scale." Results showed a small but significant gender effect favoring females in the environmental factors and equipment sub-dimension and total score. Small but significant differences were also found in the exercise session sub-dimension and total score in favor of team sports participants and those who had received prior treatment. Students with a history of sports injury showed higher awareness in the exercise session sub-dimension. No significant relationships were observed between age or sports experience and scale scores. The most common injury regions were the ankle (27.7%), knee (19.7%), and wrist (16.1%), while the most frequent injury types were sprain (23%), tear (20.1%), and fracture (16.8%). In conclusion, female students, team sports participants, and those with prior injuries or treatment had higher injury prevention awareness, highlighting the need for educational programs and accessible treatment to support informed and healthy sports professionals.

Keywords Sports Injury, Awareness, Student, Prevention, Sports Sciences

Öz

Araştırmada, spor bilimleri öğrencilerinin spor yaralanmalarından korunma farkındalıklarını tespit etmek ve elde edilen verilerin yaş, cinsiyet, spor branşı, spor yaşı, yaralanma geçmişi, tedavi alma durumu, yaralanma bölgesi ve yaralanma türü ile ilişkisini incelemek amaçlanmıştır. Araştırma, 2023–2024 eğitim-öğretim yılında İzmir'deki üniversitelerde spor bilimleri programlarında öğrenim gören 364 lisans öğrencisi (137 kadın, 227 erkek) ile nicel betimsel tarama modeli kullanılarak gerçekleştirilmiştir. Farkındalık düzeyi "Spor Yaralanmalarından Korunma Farkındalığı Ölçeği" ile değerlendirilmiştir. Analizler, çevresel faktörler ve ekipman alt boyutu ile toplam puanda kadınlar lehine küçük fakat anlamlı farklar olduğunu göstermiştir. Egzersiz seansı alt boyutu ve toplam puanda, takım sporları ile ilgilenen ve daha önce tedavi almış öğrenciler lehine küçük fakat anlamlı farklılıklar saptanmıştır. Daha önce spor yaralanması geçirmiş öğrenciler, egzersiz seansı alt boyutunda daha yüksek farkındalık göstermiştir. Yaş ve spor deneyimi ile ölçek puanları arasında anlamlı ilişki bulunmamıştır. En sık yaralanma görülen bölgeler ayak bileği (%27,7), diz (%19,7) ve el bileği (%16,1), en yaygın yaralanma türleri ise burkulma (%23), yırtılma (%20,1) ve kırık (%16,8) olarak belirlenmiştir. Sonuç olarak, kadın öğrenciler, takım sporlarıyla ilgilenenler ve önceki yaralanması veya tedavisi olan öğrenciler daha yüksek farkındalık göstermiştir. Bulgular, eğitim programları ve erişilebilir tedavi olanaklarının sağlanmasının bilinçli ve sağlıklı spor profesyonellerinin yetişmesine katkı sağlayacağını vurgulamaktadır.

Anahtar Kelimeler Spor Yaralanmaları, Farkındalık, Öğrenci, Korunma, Spor Bilimleri.

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Introduction

Physical activity and sports have a significant role in all age groups due to the multiple benefits they provide (Çakır et al., 2025a; 2025b). Regular physical activity has a direct effect on health and reduces the risk factors of hypertension, high cholesterol, obesity, and stress (WHO, 2020). However, sports activities are associated with a risk of injury that can lead to permanent loss of function (Bahr & Holme, 2003).

The IOC's report on injury and illnesses in sports (2020) states that, globally, high participation is observed in sports like soccer and basketball, specifically in European and American countries. High participation rates increase the likelihood of sports injuries, which constitute a large portion of all injuries in children and adolescents, as well as a significant portion in adults (Emery et al., 2015; Kisser & Bauer, 2012; European Commission, 2021). Sports injuries can cause pain, limitations on activity, loss of performance, and long-term negative effects on physical and mental health (Zech, Hübscher, Vogt, Banzer, Hänsel, and Pfeifer, 2009). Additionally, sports injuries are common among athletes who participate in sports for both professional and recreational purposes in different disciplines; these injuries can have a significant impact on health and performance, and may lead to long-term issues in a person's life. Sports injuries can cause pain, loss of playtime, and decreased mobility and stability (Jauhiainen et al., 2021).

European statistics indicate that approximately 6 million people are treated annually for sports-related injuries, and 10% of these require inpatient care. Additionally, approximately 7,000 fatal sports-related injuries are annually reported (Kisser & Bauer, 2012; Hassan, 2022). 11% of the world's athletes have injuries during the Olympics, the highest risk of injury is in sports that involve contact and team sports (Engebretsen et al., 2013). Studies have demonstrated that team sports and combat sports have the greatest prevalence of sports-related injuries, the knee and shoulder are the most commonly injured areas, and injuries occur more often during training than during competitions (Hammami et al., 2018).

Sports injuries are not only detrimental to the performance of athletes, but also have an effect on their physical and mental health (Tranaeus, 2024; Dacus et al., 2023). Additionally, the costs associated with the diagnosis and treatment of injuries, as well as the time away from sports, are significant financial burdens for individual athletes and organizations that participate in sports (Cisyk, 2024). Conversely, the increasing participation in physical activity is linked to significant personal and social benefits, as a result, studies are devoted to approaches that prevent sports injuries and recommend ways to reduce them.

If the necessary safeguards are employed, the frequency and seriousness of sports-related injuries can be decreased. Numerous hypotheses and theories advocate the development of knowledge and awareness within society. Taking into account the contribution of physical activity to happiness, efforts should be made to promote participation in physical activity and educate people about ways to prevent sports injuries (Gulanes, 2024 Vriend & Finch, 2017).

Students who study sports science will serve as coaches, physical education teachers, or sports managers after graduating, it's crucial that they are familiar with the prevention of sports injuries. Evidence-based strategies and initiatives, such as pre-participation assessments, appropriate training, and equipment changes, have been found to be successful in reducing the risk of injury and maintaining athletic performance (Soligard et al., 2008, Gulanes et al., 2024).

The objective of this investigation is to determine the degree to which sports science students are aware of the prevention of sports injuries, and to investigate the factors that influence this awareness in regards to variables like age, gender, sports type, the age of

participation in sports, injury history, and treatment status. As a result, the objective is to create a scientific foundation for educational programs and preventative measures.

Materials and Methods

Research Model

This research, which investigates the knowledge of sports science students regarding the prevention of sports injuries, is observational in nature and was conducted using a survey methodology. This model is employed when the individual, subject, event, or object of research is described as it currently exists (Büyüköztürk, Çakmak, Akgün, Karadeniz, and Demirel, 2024).

Research Group

The investigation included students between the ages of 18 and 24 who were enrolled in sports science programs (Coaching Education, Physical Education and Sports Teaching, Sports Management, Exercise and Sports Sciences, Sports Sciences) at universities in Izmir. The population of the investigation is composed of students enrolled in sports science classes at universities in Izmir, the maximum number of students in the study is 1,944 according to current rules. Taking this population into consideration, the minimum sample size was determined to be 321, with a confidence interval calculated at 5% (Raosoft, 2024).

Convenience sampling is one of the non-probability sampling methods, it was employed to choose participants for the study. This approach is most common when time, accessibility, and cost are all considered in order to reach a specific demographic group (Cohen, Manion, and Morrison, 2018). A total of 364 students from universities participated in the investigation. The conclusions that can be drawn are generalizable to the population. Descriptive statistics regarding the participants are listed in Table 1.

Table 1. Descriptive statistical results regarding participants

Variables	n	Min.	Maks.	\bar{X}	SS
Age	364	18	44	21.54	2.64
Height (m)	364	1.52	1.99	1.75	.09
Body Weight (kg)	364	42	110	70.18	12.98
BMI (kg/m ²)	364	16	34.72	22.58	2.64

The participants' average age was 21.54 ± 2.64 , average height was 1.75 ± 0.09 m, average body weight was 70.18 ± 12.98 kg, and average Body Mass Index (BMI) was 22.58 ± 2.64 kg/m².

Data Collection Tools

Personal Information Form: A personal information form was designed to collect demographic characteristics of sports science students. The questionnaire inquired about participants' age, gender, sports of interest, experience with that sport, history of sports injuries, treatment received at medical institutions, and the location and type of sports injuries.

Sports Injury Prevention Scale: The Sports Injury Prevention Scale, developed by Ercan and Önal (2021), has been validated for reliability and validity in Turkish and was used to assess participants' awareness of sports injury prevention. The scale uses a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) and consists of 18 items and four subscales (personal health status, environmental factors and equipment, and exercise courses and exercise plans). The scale has a Cronbach's alpha reliability

coefficient of 0.884. The total score is calculated from the responses to all items on the scale, with a minimum score of 18 and a maximum score of 90. Scores for each subscale range as follows: Personal Health Status (4-20 points), Environmental Factors and Equipment (5-25 points), Exercise Courses (5-25 points), and Exercise Plans (4-20 points). A higher total score indicates a higher level of awareness of sports injury prevention.

Study data were collected in person after participants received the necessary information regarding the study's purpose, methods, and rights and signed an informed consent form. Voluntary participation was ensured, and personal data was maintained strictly confidential.

Data Analysis

Participants' responses to the scale items were converted to numerical values and entered into the SPSS 26.0 software package. Skewness and kurtosis coefficients were used to verify the normal distribution of scores on each subscale of the Sports Injury Prevention Awareness Scale with respect to the independent variables. Because the skewness and kurtosis coefficients fell outside the range of +1 and -1, we concluded that the data did not follow a normal distribution (Uysal & Kılıç, 2022).

Therefore, the Spearman correlation test was used to examine the relationship between age, sports experience, and the subscales and the total score. The Mann-Whitney U test was more appropriate for examining differences between subscale scores and the total score, as well as differences between variables such as gender, sport, sports experience, previous sports injuries, and medical treatment.

Percentage and frequency analysis were used to analyze the injury location and type of students with previous sports injuries. All analyses were statistically significant at $p < 0.05$. Significant differences were interpreted using the r value of the Mann-Whitney U test, taking into account effect size.

Results

The Spearman correlation test was used to examine the relationship between sports injury prevention awareness and age among sports science students. The results are shown in Table 2. The strength of the correlation between variables is interpreted as follows based on the correlation coefficient: 0–0.30 indicates a low correlation level, 0.30–0.70 indicates a moderate correlation level, and 0.70–1 indicates a high correlation level (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2024).

Table 2: Awareness of preventing sports injuries based on age and sports experience Spearman correlation test results

Variables	Subscales									
	Personal Health Status		Environmental Factors -Equipment		Exercise		Exercise		Total	
	r	P	R	P	r	P	r	P	r	P
Age	.003	.953	.028	.592	-.024	.650	-	.098	-	.479
Sports Experience	-.011	.831	.002	.967	-.016	.767	-	.333	-	.752

Table 2 shows that there was no significant correlation between the age of students majoring in sports science and the scores on any of the subscales or the total score of the Sports Injury Prevention Awareness Scale: "Personal Health Status" subscale $r = .003$, $p > .05$; "Environmental Factors and Equipment" subscale $r = .028$, $p > .05$; "Exercise Course" subscale $r = -.024$, $p > .05$; "Exercise Plan" subscale $r = -.087$, $p > .05$; and the total score $r = -.037$, $p > .05$. There was no significant correlation between sports experience and the Sports Injury Prevention Awareness Scale: "Personal Health Status"

subscale $r = -.011$, $p > .05$; "Environmental Factors and Equipment" subscale $r = .002$, $p > .05$; "Exercise Course" subscale $r = -0.016$, $p > .05$; "Exercise Plan" subscale $r = -0.051$, $p > .05$; and the total score $r = -0.017$, $p > .05$.

The Mann-Whitney U test was used to assess differences in sports injury prevention awareness and gender among sports science students. The results are shown in Table 3. In analyses where significant differences were found, the effect size was calculated using the formula $r = Z / \sqrt{N}$. Effect size values are interpreted as follows: 0.10 is considered a small effect size, 0.30 is considered a medium effect size, and 0.50 is considered a large effect size (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2024).

Table 3: Gender differences in awareness of sports injury prevention Mann Whitney U Test Results

Subscales of Sports Injury Prevention	Gender	N	Mean Rank	Sum of Ranks	U	P	r																																												
Personal Health Status	F	137	190.27	26067.5	14484.5	.249																																													
	M	227	177.81	40362.5				Environmental Factors and Equipment	F	137	204.67	28039.5	12512.5	.001***		M	227	169.12	38390.5	Exercise Session	F	137	190.50	26098	14454	.255		M	227	177.67	40332	Exercise Program	F	137	190.17	26053.5	14498.5	.246		M	227	177.87	40376.5	Total Score	F	137	197.10	27003	13549	.039*	.108
Environmental Factors and Equipment	F	137	204.67	28039.5	12512.5	.001***																																													
	M	227	169.12	38390.5				Exercise Session	F	137	190.50	26098	14454	.255		M	227	177.67	40332	Exercise Program	F	137	190.17	26053.5	14498.5	.246		M	227	177.87	40376.5	Total Score	F	137	197.10	27003	13549	.039*	.108	M	227	173.69	39427								
Exercise Session	F	137	190.50	26098	14454	.255																																													
	M	227	177.67	40332				Exercise Program	F	137	190.17	26053.5	14498.5	.246		M	227	177.87	40376.5	Total Score	F	137	197.10	27003	13549	.039*	.108	M	227	173.69	39427																				
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	M	227	177.87	40376.5				Total Score	F	137	197.10	27003	13549	.039*	.108	M	227	173.69	39427																																
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	M	227	173.69	39427																																															

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; F: Female; M: Male

Table 3 shows that there are small but significant differences between gender and the "Environmental Factors and Equipment" subscale ($U = 12.512.5$, $p < .001$, $r = .167$) and total score ($U = 13.549$, $p < .05$, $r = .108$) for sports science students. This difference favors female students, as an examination of the rank means reveals that female students scored higher than male students. No significant differences were found between gender and other subscales: personal health status ($U = 14.4845$, $p > .05$), exercise curriculum ($U = 14.454$, $p > .05$), and exercise plan ($U = 14.4985$, $p > .05$). A Mann-Whitney U test was conducted to examine differences in sports science students' knowledge of sports injury prevention and their preferred sports. The results are shown in Table 4.

Table 4: Awareness of preventing sports injuries by sport type Mann-Whitney U Test results

Subscales of Awareness of Prevention of Sports Injuries	Sport Type	N	Mean Rank	Sum of Ranks	U	P	r																												
Personal Health Status	TS	190	187.26	35580	15625	.342																													
	IS	174	177.3	30850				Environmental Factors and Equipment	TS	190	192.17	36511.5	14693.5	.061		IS	174	171.95	29918.5	Exercise Session	TS	190	198.16	37650.5	13554.5	.003*	.157	IS	174	165.4	28779.5	Exercise Program	TS	190	191.18
Environmental Factors and Equipment	TS	190	192.17	36511.5	14693.5	.061																													
	IS	174	171.95	29918.5				Exercise Session	TS	190	198.16	37650.5	13554.5	.003*	.157	IS	174	165.4	28779.5	Exercise Program	TS	190	191.18	36324.5											
Exercise Session	TS	190	198.16	37650.5	13554.5	.003*	.157																												
	IS	174	165.4	28779.5				Exercise Program	TS	190	191.18	36324.5																							
Exercise Program	TS	190	191.18	36324.5																															

	IS	174	173.02	30105.5	14880.5	.077	
Total Score	TS	190	198.02	37623.5			
	IS	174	165.55	28806.5	13581.5	.003*	.154

*p<0.05, **p<0.01, ***p<0.001; TS: Team Sports; IS: Individual Sports

Table 4 shows small but significant differences between the sports science majors' interest in sports disciplines and the "Sports Events" subscale (U=13554.5, p<0.05, r=0.157) and total scores (U=13581.5, p<0.05, r=0.154) of the Sports Injury Prevention Awareness Scale. This significant difference favors students interested in team sports. Based on the average ranking, students interested in team sports scored higher. There were no significant differences between the "Personal Health Status" subscale (U=15625, p>0.05) and the "Environmental Factors and Equipment" subscale (U=14693) of the Sports Injury Prevention Awareness Scale. (Please note that the "5, p>0.05, p>0.05" subscale, and the "Exercise Plan" subscale (U=14880.5, p>0.05) did not differ significantly between different sports disciplines, but students interested in team sports had higher scores than those interested in individual sports. To determine whether there is a significant difference between sports injury prevention awareness and the "injury history" variable among students majoring in sports science, a Mann-Whitney U test was conducted, and the results are shown in Table 5.

Table 5: Awareness of preventing sports injuries based on injury history Mann-Whitney U Test Results

Subscales of Awareness of Prevention of Sports Injuries	History of Previous Sports Injuries	N	Mean Rank	Sum of Ranks	U	P	r
Personal Health Status	Y	274	184.49	50549			
	N	90	176.46	15881	11786	.508	
Environmental Factors and Equipment	Y	274	185.02	50696.5			
	N	90	174.82	15733.5	11638.5	.414	
Exercise Session	Y	274	189.25	51855	10480	.031*	.113
	N	90	161.94	14575			
Exercise Program	Y	274	184.77	50626			
	N	90	175.60	15804	11709	.441	
Total Score	Y	274	186.71	51158			
	N	90	169.69	15272	13549	.182	

*p<0.05, **p<0.01, ***p<0.001; Y: Yes; N: No

Table 5 shows a small but significant difference between injury history and the "Number of Exercises" subscale of the Sports Injury Prevention Awareness Scale for Sports Science students (U = 10.480, p < .05, r = .113). This difference favors students with a history of sports injuries; given the mean scores across the scales, we hypothesize that students with a history of injury will score higher.

None of the other subscales of the scale showed significant differences from the total score or injury history: the "Personal Health" subscale (U = 11.786, p > .05), the "Environmental Factors and Equipment" subscale (U = 11.638.5, p > .05), the "Exercise Program" subscale (U = 11.709, p > .05), and the total score (U = 13.549, p > .05). However, when examining the mean scores, it was found that students with a history of injury scored higher than those without.

The results of the Mann-Whitney U Test conducted to examine the differences between students who had previously experienced a sports injury and their awareness of sports injury prevention in terms of receiving treatment at a healthcare facility after the injury are presented in Table 6.

Table 6: Awareness of preventing sports injuries based on whether treatment is received at a healthcare facility after an injury

Subscales of Awareness of Prevention of Sports Injuries	Treatment Status	N	Mean Rank	Sum of Ranks	U	P	r																																												
Personal Health Status	Y	235	137.81	32385	4510	.867																																													
	N	39	135.64	5290				Environmental Factors and Equipment	Y	235	140.38	32989.5	3905.5	.130		N	39	120.14	4685.5	Exercise Session	Y	235	143.36	33690.5	3204.5	.002**	.159	N	39	102.17	3984.5	Exercise Program	Y	235	140.15	32935.5	3959.5	.144		N	39	121.53	4739.5	Total Score	Y	235	141.49	33249.5	3645.5	.040*	.107
Environmental Factors and Equipment	Y	235	140.38	32989.5	3905.5	.130																																													
	N	39	120.14	4685.5				Exercise Session	Y	235	143.36	33690.5	3204.5	.002**	.159	N	39	102.17	3984.5	Exercise Program	Y	235	140.15	32935.5	3959.5	.144		N	39	121.53	4739.5	Total Score	Y	235	141.49	33249.5	3645.5	.040*	.107	N	39	113.47	4425.5								
Exercise Session	Y	235	143.36	33690.5	3204.5	.002**	.159																																												
	N	39	102.17	3984.5				Exercise Program	Y	235	140.15	32935.5	3959.5	.144		N	39	121.53	4739.5	Total Score	Y	235	141.49	33249.5	3645.5	.040*	.107	N	39	113.47	4425.5																				
Exercise Program	Y	235	140.15	32935.5	3959.5	.144																																													
	N	39	121.53	4739.5				Total Score	Y	235	141.49	33249.5	3645.5	.040*	.107	N	39	113.47	4425.5																																
Total Score	Y	235	141.49	33249.5	3645.5	.040*	.107																																												
	N	39	113.47	4425.5																																															

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Y: Yes; N: No

Table 6 shows that there is a significant correlation between the status of treatment at a healthcare facility after injury among sports science students who have previously experienced a sports injury and the Exercise Session Subscale of the Sports Injury Prevention Awareness Scale, $U=3204.5$, $p < .01$, $r=.159$, and the total score, $U=3645.5$, $p < .05$, $r=.107$. This significant difference is in favor of the students who received treatment. Considering the rank averages, it is understood that the scores of students who received treatment at a healthcare facility after an injury are higher. The scores of the Personal Health Status Subscale of the Sports Injury Prevention Awareness Scale, $U=4510$, $p > .05$, Environmental Factors and Equipment Subscale $U=3905.5$, $p > .05$, and Exercise Program Subscale scores $U=3959.5$, $p > .05$, while it was found that the rank averages of students who received treatment at a healthcare facility after injury were higher than those of students who did not receive treatment.

Descriptive statistics regarding the injury site and type for students participating in the study who had previously experienced a sports injury are presented in Table 7.

Table 7: Descriptive statistical results regarding the injury site and type of injury for those who have previously suffered a sports injury

Variables	N	%	
Injury Site	Shoulder	38	13.9
	Knee	54	19.7
	Elbow	10	3.6
	Wrist	44	16.1
	Ankle	76	27.7
	Hip	3	1.1
	Neck	9	3.3
	Back	4	1.5
	Lower Back	10	3.6
	Other	26	9.5
Type of Injury	Fracture	46	16.8
	Dislocation	43	15.7
	Sprain	63	23
	Tear	55	20.1
	Contusion	24	8.8
	Tendinitis	18	6.6
	Bursitis	1	.4
	Other	24	8.8
Total	274	100	

Table 7 indicates that the most common locations of injury among students who participated in the study and had previously been injured by sports were: the ankles, the knees, and the wrists. These regions were followed by shoulder (13.9%), other (9.5%), elbow (3.6%), lower back (3.6%), neck (3.3%), and hip (1.1%).

The most common types of injuries experienced by participants were sprains (23.6%), tears (20.1%), fractures (16.8%), dislocations (15.7%), contusions (8.8%), other (8.8%), and bursitis (0.4%).

Discussion and Conclusion

In this research, the awareness of sports science students regarding the prevention of sports injuries was assessed based on variables like age, gender, sports discipline, sports experience, injury history, and treatment status.

The analyses showed no significant association between the students' age and their knowledge of preventing sports injuries. When analyzing the participants' awareness levels based on gender, a significant difference in favor of female students was observed in the environmental factors and equipment subscale as well as the total score. Other sub-dimensions were not significant, but it was observed that the average of female students was higher than that of men. This discovery supports the conclusion of a research study by Wang et al. (2012) studied high school athletes in Taiwan, and found that female athletes had a greater understanding and attitudes towards the prevention of sports-related injuries than male athletes.

In the evaluation based on sports discipline, a difference favoring students participating in team sports was observed in terms of the number of sessions of exercise and the total score achieved. Other sub-dimensions were unaltered, but the investigators determined that students who participated in team sports had a higher degree of awareness than those who participated in individual sports. Also, Karayol and Eroğlu (2020) documented that students who participated in team sports had more severe sports anxiety than athletes who participated in individual sports. Despite the belief that people with high sports injury anxiety also have an increased awareness of protection, additional research is necessary to substantiate this association.

A significant association was not observed between students' sports-related experience and their knowledge of how to avoid sports-related injuries. However, students that had previously suffered from sports injuries were more aware of the benefits of exercise in the session's subscale. Despite no significant difference being found in terms of the other subscales of the scale or the total score, it was believed that the degree of injury prevention awareness of students with a history of injuries was greater than that of students without a history of injuries. Şeker (2017) and Kolkusa and Kayakaya (2023) stated that the education or knowledge of athletes regarding injuries decreased the likelihood of them having injuries. In this context, it can be assumed that the experiences of students that had previously been injured by sports increased their knowledge of how to prevent injury.

When analyzing the condition of the treatment after the injury, a significant difference was observed in favor of students who received treatment during the exercise session's subscale and total score. Other subscales that were assessed did not show a significant difference between the treated and the untreated students in regards to awareness of protection, however, the treated students had a higher degree of awareness of protection than the untreated students. Kolkusa and Kayakaya (2023) suggested that athletes who are knowledgeable enough can reduce the frequency and location of injuries. In this context, it can be assumed that students who were treated at a healthcare facility after suffering a injury increased their understanding of how to prevent injuries through their experiences.

Ultimately, sports science students' understanding of how to prevent injury is influenced by factors like gender, sport type, history of injury, and status of treatment. Women who participate in athletic teams, as well as those with previous injury

experience or treatment, have a higher degree of awareness. These findings serve as a precursor to the development of educational programs and preventative measures.

In the curriculum for sports science, education intended to increase the awareness of injury prevention in sports should be prioritized, specifically regarding the gender and specialty differences associated with sports. Since the team sport students have a higher degree of awareness, the practicality of the sport should be enhanced for the individual sport students. Students that had previously been injured and received treatment were found to have a high degree of awareness. Future studies should explore the specific effects of injury experience and treatment processes on awareness in greater detail. Students' awareness levels should be evaluated periodically in order to assess and maintain the effectiveness of training programs. Other factors related to psychosocial and environmental awareness (such as motivation, guidance from coaches, and support from sports clubs) should be considered, as well as the generalizability of the findings across different universities or populations.

Kısaltmalar / Abbreviations

SD	Standart sapma (Standard deviation)
X	Ortalama (Mean)
SPSS	Sosyal bilimler için istatistik paketi (Statistical package for the social sciences)
p value	Anlamlılık değeri (Significant value)
t value	T değeri (T value)
N	Katılımcı sayısı (Number of participant)
Min	Minimum (Minimum)
Max	Maksimum (Maximum)
BMI	Vücut kütle indeksi (Body mass index)
Kg	Kilogram (Kilogram)
Cm	Santimetre (Centimeter)
L	Litre (Liter)
Kcal	Kilokalori (Kilocalorie)
W	Wat (Watt)

Beyanlar / Declarations

Etik Onay ve Katılım Onayı / Ethics approval and consent to participate

Bu çalışmanın hazırlanma ve yazım sürecinde "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında bilimsel, etik ve alıntı kurallarına uyulmuş olup; toplanan veriler üzerinde herhangi bir tahrifat yapılmamış ve bu çalışma herhangi başka bir akademik yayın ortamına değerlendirme için gönderilmemiştir. Makale ile ilgili doğabilecek her türlü ihlallerde sorumluluk yazara aittir. Çalışma için etik onay, İzmir Demokrasi Üniversitesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulu tarafından onaylanmıştır (Karar No. 2024/5-17, 29 Mayıs 2024). Tüm katılımcılar bu çalışmaya gönüllü olarak katılmıştır. /

During the preparation and writing of this study, scientific, ethical and citation rules were followed in accordance with the 'Higher Education Institutions Scientific Research and Publication Ethics Guidelines'; no alterations were made to the collected data, and this study has not been submitted for evaluation to any other academic publication medium. The author is solely responsible for any violations that may arise in connection with this article. The Ethical approval for the study was granted by the İzmir Demokrasi University Non-Interventional Clinical Research Ethics Committee (Decision No. 2024/5-17, dated May 29, 2024). All participants voluntarily participated in this study.

Veri Ve Materyal Erişilebilirliği / Availability of data and material

Bu çalışmanın bulgularını destekleyen veriler, makul talepler üzerine sorumlu yazardan temin edilebilir. Veri seti yalnızca akademik amaçlar için erişilebilir olacak ve verilerin herhangi bir kullanımı, orijinal çalışmayı referans gösterecek ve katılımcıların gizliliğini koruyacaktır.

The data that support the findings of this study are available from the corresponding author upon reasonable request. The dataset will be accessible only for academic purposes, and any use of the data will recognize the original study and maintain the confidentiality of the participants.

Çıkar Çatışması / Competing interests

Yazarlar, bu makalede sunulan çalışmayı etkileyebilecek herhangi bir çıkar çatışması veya kişisel ilişkiye sahip olmadıklarını beyan etmektedirler.

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Yazar Katkıları / Authors' Contribution Statement

Çalışmanın tasarımı ve planlanması: G.Y, H.B., F.B, F.Ç.K; Veri toplama, analizi veya yorumlanması G.Y, H.B., F.B, F.Ç.K; Makalenin yazımı: G.Y, H.B., F.B, F.Ç.K; Veri düzenleme, yöntem belirleme, yazım – özgün taslak, yazım – gözden geçirme ve düzenleme G.Y, H.B., F.B, F.Ç.K; Tüm yazarlar, makalenin önemli noktalarını eleştirel bir şekilde gözden geçirmiştir. Tüm yazarlar makalenin son halini onaylamıştır. /

Design and planning of the study: G.Y, H.B., F.B, F.Ç.K; Data collection, analysis or interpretation: G.Y, H.B., F.B, F.Ç.K; Manuscript preparation: G.Y, H.B., F.B, F.Ç.K; Data organization, methodology development, writing - original draft, writing – review and editing: G.Y, H.B., F.B, F.Ç.K; All authors critically reviewed the key points of the manuscript and approved the final version.

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