



TYPES OF INJURIES SEEN IN PEOPLE PERFORMING TEAM SPORTS AND ANALYSIS OF THESE INJURIES ACCORDING TO DIFFERENT VARIABLES (BURSA SAMPLE)

İlker Kirişçi¹ⁱ

Canan Dinçer Albayrak²

¹Marmara University Institute of Health Sciences,
Department of Physical Education and Sport,
Istanbul, Turkey

²Sakarya University,
School of Physical Education and Sports,
Sakarya, Turkey

Abstract:

This research aims to determine cognizance of sport injuries in male sportsmen between 16 and 28 ages in volleyball, basketball, football and handball players. According to this research, injuries in male sportsmen between 16 and 28 ages in volleyball, basketball, football, handball branches in Bursa province and their cognizance of sport injuries, and the differences of these parameters according to branches are stated. The survey was conducted on 250 sportsmen. Participants' average age was 19, 2±2, 79. In the present research, analyses of parameters were done by the computer program SPSS 16.0. While comparing of the continuous variables T Test and ANOVA were used. Categorical data were analyzed by using cross tables, chi-square test and Pearson's Correlation Test. According to the results, muscle injuries, ligament, meniscus injuries and sprains were frequently seen. It was found that volleyball players take injuries more seriously than basketball player. More Injuries are at least taken into consideration by basketball players. It was also found that majority of the sportsmen that participated in the research; do not take specific precautions against injuries.

Keywords: sports, injury, muscle, treatment

1. Introduction

Sport is a humanitarian activity which trails crowd of people and a commercial activity which is used as an advertising tool in political and ideological sense. It is a well-known fact that doing sports reinforces the friendship and collaboration among people.

ⁱ Correspondence: email ilkerkirisci82@gmail.com

Sportsmen carry out their activities under various risks in the sports world. Some of these risks may have an adverse impact on their performance whereas some others may cause sports injuries. Today sport has become an extensive sector, and sportsmen have begun to employ different methods so as to attain the highest performance in their branches. A huge amount of money spent on the sector, the negative effects of health problems on sportsmen's performance, and their career breaks due to sports injuries require exploring new ideas and enhancements regarding to health of sportsmen (Özcan, 2001: 191-200).

Sports injuries comprise 25% of all injuries that occur in childhood and adolescence. Sportsmen may suffer from sports injuries, but people who do not do sports may also have such kinds of injuries. (Oral et al., 2016: 61).

The majority of sports injuries are not serious, and under these circumstances, sportsmen may restart doing sports in a short time. 30% of the injuries are serious enough to keep sportsmen away from the fields for at least 1 week (Kalyon, 1997: 124).

There is always the possibility of injury in a sporting event or during training. Especially, children are at risk of injury even if they do not do sports because they are more inclined to carry out activities than adults (Gül, 2011: 117).

The current study aims at identifying the frequencies of injuries experienced by male sportsmen in the branches of volleyball, basketball, football, and handball as well as investigating into how these injures have been treated. It also attempts to compare four branches in terms of frequencies, types and treatments of sport injuries and sportsmen's level of knowledge on how to protect themselves from these injuries, thereby making some suggestions in the light of the research findings.

2. Materials and Method

2.1 Research Design

The study employed a survey method and correlational analysis as a research method. Correlation analysis is a research model which measures the presence of relationship between two variables as well as the strength and direction of this relationship. Within the scope of this study, the dependent variable was the knowledge level of sportsmen about how to protect themselves from injuries, and the independent variable was the frequencies of sports injuries.

2.2 Research Site and Sampling

The participants of the study were 250 sportsmen with football, volleyball, basketball, handball licenses in Bursa. A non-probability sampling method was used to select these participating sportsmen from April to May in 2010. This sampling method may not provide all the individuals in the population with equal chances of being selected as the research samples. Under these circumstances, the non-probability sampling method was used. In other words, each unit does not have the equal chance to participate in the research. In this method, units are not randomly selected.

2.3 Data Collection

In order to collect the data, a 30-item questionnaire was prepared in view of the similar studies in the related literature and with the help of expert opinion. The first 5 items were designed to investigate the branches of the participating sportsmen and the effects of their branches on their injuries. The rest 25 items were designed to identify whether they experienced sports injuries, how these injuries were treated, whether they recovered and attain their prior performance, and which branch sportsmen were more conscious of protecting themselves from injuries. All the items in the questionnaire were open-ended. Assuming that sportsmen had a low-level of knowledge about sports injuries; the potential responses to questionnaire items were predetermined and classified beforehand. All of the collected data were used in the analyses.

2.4 Statistical Methods Used in the Study

Data analyses were carried out through computer-based statistical software. First, the data were checked and coded. Next, the frequencies, the percentages and means scores were calculated. Then, tables were created in the light of findings from these analyses. Finally, comments were added to these tables and the research sub-problems were tested.

3. Findings

A. Do sport injuries differ by branch of sports?

Table 1: Distribution of sport injuries in sportsmen by branches

	Injury region		Branch				Significance
			Football	Basketball	Handball	Volleyball	
1	Shoulder region	No	66	45	48	44	0.000
		Yes	34	5	2	6	
2	Elbow-Arm Region	No	76	47	45	44	0.013
		Yes	24	3	5	6	
3	Hand-Wrist Region	No	65	50	43	34	0.000
		Yes	35	0	7	16	
4	Thigh and Abdominal Region	No	96	50	46	49	0.167
		Yes	4	0	4	1	
5	Knee Region	No	86	36	35	45	0.013
		Yes	14	14	15	5	
6	Foot-Ankle Region	No	83	24	27	38	0.000
		Yes	17	26	23	12	
7	Head and Face Region	No	100	50	49	47	0.035
		Yes	0	0	1	3	
8	Spinal Injuries	No	0	0	0	0	No calculation
		Yes	0	0	0	0	

İlker Kirişçi, Canan Dinçer Albayrak
 TYPES OF INJURIES SEEN IN PEOPLE PERFORMING TEAM SPORTS AND ANALYSIS OF
 THESE INJURIES ACCORDING TO DIFFERENT VARIABLES (BURSA SAMPLE)

		Chi-square value	df	P Value
1	Pearson's chi-squared test	26,360	3	0,000
2	Pearson's chi-squared test	10,737	3	0,013
3	Pearson's chi-squared test	27,467	3	0,000
4	Pearson's chi-squared test	5,071	3	0,167
5	Pearson's chi-squared test	10,726	3	0,013
6	Pearson's chi-squared test	25,781	3	0,000
7	Pearson's chi-squared test	8,638	3	0,035
8				No calculation

Regions of injuries vary according to branches. However, there was no difference as far as hip and abdominal regions are concerned. It is understood that basketball players mostly suffer from ankle and knee injuries. Different from this, football players suffer from wrist and shoulder region injuries. Volleyball players suffer from wrist and angle whereas handball players suffer from angle regions injuries. Head and face injuries are mostly seen in volleyball players. In elbow-arm region injuries, 24 injuries out of 38 and 34 injuries out of 47 were observed in football.

B. Do sport injuries differ by treatment methods in sport branches?

Table 2: Distribution of sport injuries in sportsmen by treatment methods

		Branches					
		Football	Basketball	Handball	Volleyball	Total	Percentage
Treatment	consult a doctor	41	8	21	23	93	43,1
	through his/her own means	37	14	15	14	80	37,0
	guidance by a trainer	13	23	2	1	39	18,1
	bonesetter	2	0	2	0	4	1,9

43,1% of sportsmen prefer consulting a doctor whereas 37% prefer treatment by his/her own means. 4 footballs players out of 93 consult a bonesetter whereas 2 handball players out of 50 consult a bonesetter. Nonetheless, none of the basketball and volleyball players consult a bonesetter. On the other hand, 23 basketball players out of 50, 13 football players out of 100, 2 handball players out of 50 and 1 handball player out of 50 prefer guidance by a trainer.

C. Does cognizance of sport injuries differ by sport branches?

Table 3: Distribution of cognizance of sport injuries in sportsmen by branches

			Cognizance of injury					
			None	Low	Some	Medium	High	Total
Branch	Football	Number	3	47	33	15	2	100
		Percentage	3,0%	47,0%	33,0%	15,0%	2,0%	100,0%
	Basketball	Number	0	34	15	1	0	50
		Percentage	,0%	68,0%	30,0%	2,0%	,0%	100,0%
	Handball	Number	2	13	16	17	2	50

İlker Kirişçi, Canan Dinçer Albayrak
 TYPES OF INJURIES SEEN IN PEOPLE PERFORMING TEAM SPORTS AND ANALYSIS OF
 THESE INJURIES ACCORDING TO DIFFERENT VARIABLES (BURSA SAMPLE)

		Percentage	4,0%	26,0%	32,0%	34,0%	4,0%	100,0%
	Volleyball	Number	0	21	16	11	2	50
		Percentage	,0%	42,0%	32,0%	22,0%	4,0%	100,0%
Total		Number	5	115	80	44	6	250
		Percentage	2,0%	46,0%	32,0%	17,6%	2,4%	100,0%

	chi-squared test	df	P value
Pearson's chi-squared test	31,220	12	0,002

47% of football players, 42% of volleyball players, 68% basketball players have little level of cognizance of injuries. 34% of handball players have medium level of cognizance of injuries. Nevertheless, only 2,4% of sportsmen have high level of cognizance of injuries whereas 2% of them have no cognizance.

D. Is there a relation between sports injuries and cognizance of injury?

Table 4: Distribution of the relation between sports injuries in sportsmen and cognizance of injury

		Cognizance of injury						
			None	Low	Some	Medium	High	Total
Had injury?	Yes	Number	3	104	71	32	6	216
		Percentage	1,4%	48,1%	32,9%	14,8%	2,8%	100,0%
	No	Number	2	11	9	12	0	34
		Percentage	5,9%	32,4%	26,5%	35,3%	,0%	100,0%
Total		Number	5	115	80	44	6	250
		Percentage	2,0%	46,0%	32,0%	17,6%	2,4%	100,0%

	Chi-squared test	df	P value
Pearson's chi-squared test	12,880	4	0,012

As cognizance of injury increases, the rate of injuries does not decrease. As seen in the table, 3 sportsmen out of 5 had injuries who had no cognizance of injury (40%), yet 6 sportsmen out of 6 had injuries who were fully aware of cognizance injury 100%.

Table 5: Distribution of first respond to injuries by branches

		Branch					
		Football	Basketball	Handball	Volleyball	Total	Percentage
First Respond	Cold application	52	13	21	28	114	52,80%
	Hot application	0	0	1	0	1	0,40%
	No treatment	41	32	18	10	101	46,80%
Total		93	45	40	38	216	100,0%
Percentage of no treatment		44,10%	71,10%	45%	26,30%	46,80%	

	Chi-squared test	df	P value
Pearson's chi-squared test	31,892	9	0,001

First respond methods vary according to branches. In first respond, cold application was used 52,8% of the cases whereas hot application was 0,5%. 46,8% of the sportsmen did not receive any treatment. Similarly, 44% of football players, 71% basketball players, 45% of handball players and 26% of volleyball players received no treatment.

4. Discussion

In this part of the study, the findings obtained are related with the literature. In the study, a %96 of injury rate is detected in the branch of football. This figure matches up with the findings of the studies of Bahr et al. (1991), Kanbir (2001) and Manussen et al. (2010). Furthermore, the results of the studies on handball, basketball and volleyball also correspond to the findings of Bahr's study. On the other hand, this study differs from Magnussen et al. (2010) as basketball comes the first and football the second in this latter study. Moreover, Laoruengthana (2009) states that handball and basketball are the branches that leads to the sports injuries. Half of the injuries occur in arms and legs and it is concluded that knee and ankle injuries are the most injured parts. The results indicate that most of the injuries occur in the branch of football with %96 injury rate, basketball with %90, and then handball with %80, respectively, corresponding to the findings of Laoruengthana (2009) . Another similarity is also identified in terms of the knee and ankle injuries being %50.4. Fong et al. (2007) states that the most frequently injured areas are ankles, which also corresponds to the current study results. Ristic et al. (2010) have detected in their studies that %88 of the patients experience anterior cruciate ligament injuries resulting from the sports. This finding does not support our study results. Jung et al. (2006) suggest that half of the injuries are seen on arms and legs and %24 are on head and neck. It is common to witness bruises and crushes on the head and ankle sprains. In the current study, the head-face injury rate has been %1.6 and arm-leg injury rate has been %33.4, which also differs from the findings of Jung et al.'s study.

5. Conclusions and Recommendations

It has been observed that the sportspeople mostly experience injuries on the parts of their bodies which they use and it is suggested that these injuries might be overcome by having a more disciplined period of warm-up. In order to avoid the upper extremity injuries, sportspeople should be informed about falling techniques and such activities should be included in the trainings.

It has also been concluded that knowledge on any injuries that might occur in several branches and responding to those injuries is not enough and this drawback could be overcome by regular controls and holding seminars which can be organized by the medical personnel of the sports clubs.

It is supposed that trainers are conscious enough to acknowledge that the only solution for such injuries are the doctors, that they should not intervene in such occurrences and that they should make their recommendations by doctors' guidance.

Researchers who want to make further studies on the field may get much more and relatively reliable information by making a similar research during a season reaching out sportspeople from various branches. It has also been suggested that it would be useful to carry out a similar study on trainers and compare the findings.

References

1. Aak, Mahmut ve Op. Dr. Adnan Baęriaık (2005), *Spor Yaralanmaları ve Rehabilitasyon*, Morpa Kltr Yay. Ltd. Ő., İstanbul.s. 34,35,72,108,138,139,202
2. Anderson, Bob (1993), "Stretching", evirenler: Metin Yaman, Osman Sati CoŐkuntrk, Glten Hergner, Saygin Matbaası Ofset ve Tipo., Ankara, s. 11
3. Bahr, Roald; Kannus, Pekka; Mechelen, Willem Van (1991), "Epidemiyoloji ve Spor Sakatlıklarının nlenmesi", Editrler: KJAER, Michael, [Michael Krogsgaard](#), [Peter Magnusson](#), [LarsEngebretsen](#), [HaraldRoos](#), [TimoTakala](#), [SavioWoo](#), *Textbook of Sports Medicine: Basic Science and Clinical Aspects of Sports Injury and Physical Activity*, Blackwell Publishing, s. 301, 302.
4. Baysaling, zer (2000), *Sporda Her Ynyle Doping, Zararları İla ve Krler, Dopingle Mcadele*, Umut Matbaacılık İpress Basım ve Yayın San. Tic. Ltd. Ő., İstanbul.s. 232,233
5. Ersoy, Glgn (1991), *Egzersiz ve Spor Yapanlar İin Beslenme İle İlgili Temel İlkeler*, DoęuŐ Matbaacılık ve Tic. Ltd. Ő., Ankara.s. 62,63
6. Fong, D. T., Y. Hong, L. K. Chan, P. S. Yung, K. M. Chan (2007), "A Systematic Review on Ankle Injury and Ankle Sprain in Sports", *Sports Med*, Cilt 37, No. 1, s. 73-94.
7. Griffith, Winter (2000), *Spor Sakatlıkları Rehberi*, ev: Őamil Erdoęan, Gzel Sanatlar Matbaası A. Ő., İstanbul.s. 188,189,202,203,220,451,470,494
8. Gl, Gazanfer Kemal, (2011), *ocuklar ve Spor*, Spor Yayınevi ve Kitabevi, Ankara, s.117
9. Gr, Hakan (2011), "n apraz Baę Yaralanmaları", http://www.sporhekimligi.com/index.php?option=com_content&view=article&id=69&Itemid=59, Retrieved on 30. 04. 2011.
10. <http://www.nbakolik.com/forum/mesaj.asp?gid=17959>, Retrieved on 28.04.2011.
11. <http://www.feyyazciftci.com.tr/impingement.html>, Retrieved on 13.05.2011.
12. <http://www.nenedir.net/nedir/genel-tip/8744-kasik-bolgesindeki-kas-ve-tendon-sakatliklari.html>, Retrieved on 13.05.2011.
13. <http://www.ailem.com/templates/library/1759.asp?id=13207>, Retrieved on 14.05.2011
14. <http://www.mavirize.com/genel/rehabilitasyon.html>, Retrieved on 25.07.2011

15. Jung, A., G. Langevoort, A. Pipe, A. Peytavin, F. Wong, M. Mountjoy, G. Beltrami, R. Terrell, M. Holzgraefe, R. Charles, J. Dvorak (2006), "Injuries in Team Sports Tournaments During The 2004 Olympic Games", *Am J Sports Med*, Cilt 34, No. 4, s. 565-76.
16. Kanbir, Oğuz (2001), *Sporda Sağlık Bilinci ve İlk Yardım*, 2. Baskı, Ekin Kitabevi, Bursa.s.21,42,43,45,46,47,65,79,119,223,229,238,240,245,284,285,286, 288,296,314,316,350
17. Kauzlaric, N. (2007), "The Use of Foot Orthoses in School Children With Foot Problems Due To Sports and Other Physical Activities", *Acta Med Croatica*, Cilt 61, No. 1, s. 15-17.
18. Kalyon, Tunç Alp (1997), *Özürlülerde Spor*, 1. Baskı, Bağırhan Yayınevi, Ankara, s.124
19. Kiratli, Esin ve Ahmet Sanioğlu (2005), "Basketbolcuların Esneklik Profilleri ve Sakatlanmayla Olan İlişkisi", *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, Cilt 14, s. 393-400.
20. Laoruengthana, A., P. Poosamsai, T. Fangsanau, P. Supanpaiboon, K. Tungkasamesamran (2009), "The Epidemiology of Sports Injury During the 37th Thailand National Games 2008 in Phitsanulok", *J Med Assoc Thai*, Cilt 92, No. 6, s. 204-10.
21. Magnussen, R. A., L.P. Granan, W.R. Dunn, A. Amendola, J.T. Andrish, R. Brophy, J.L. Carey, D. Flanigan, L. J. Huston, M. Jones, C. C. Keading, E. C. McCarty, R. G. Marx, M. J. Matava, R. D. Parker, A. Vidal, M. Wolcott, B. R. Wolf, R. W. Wright, K. P. Spindler, L. Engebretsen,(2010), "Cross-Cultural Comparison of Patients Undergoing
22. ACL Reconstruction in the United States and Norway", *Knee Surg Sports Traumatol Arthrosc*, Cilt 18, No. 1, s. 98-105.
23. Oral, Onur, F. İ. Yalnız, E. Deniz, (2016), *Spor ve Sağlık*, 1. Basım Nobel Akademik Yayıncılık Eğitim Danışmanlık TİC. LTD. ŞTİ., Ankara, s.61,
24. Özcan, A.O. (2001), "*Spor Felsefemiz ve Problemleri*", Türk Dünyası Araştırmaları, İstanbul, Sayı 133, s.191-200
25. Özdemir, Mehmet (2004), *Spor Yaralanmalarında Korunma ve Rehabilitasyon İlkeleri*, 1. Baskı, Baskı Çizgi Kitabevi, Konya s. 6,8-11,28,30,31,34,35,37,38,84,113,146,158, 225,226
26. Ristic, V., S. Ninkovic, V. Harhaji, M. Milankov (2010), "Causes of Anterior Cruciate Ligament Injuries", *MedPregl.*, Cilt 63, No. 7-8, s. 541-545.
27. Uslu, Burhan (1990), "Sportif Yaralanmalar", *T. C. Başbakanlık Gençlik ve Spor Genel Müdürlüğü Spor Eğitimi Dairesi Başkanlığı*. s. 93,145,165,180,189
28. Ustaoglu, A., S. Ayata, E. Akın, H. Çoknaz (2010), "İlköğretim Okulundaki Bayan Voleybol Takımında Klasik Voleybol Isınmasının Anaerobik Güce Etkisi", *Çanakkale Onsekiz Mart Üniversitesi Beden Eğitimi ve Spor Yüksekokulu 3. Ulusal Spor Bilimleri Öğrenci Kongresi Özet Kitabı*, Çanakkale.

Creative Commons licensing terms

Authors will retain the copyright of their published articles agreeing that a Creative Commons Attribution 4.0 International License (CC BY 4.0) terms will be applied to their work. Under the terms of this license, no permission is required from the author(s) or publisher for members of the community to copy, distribute, transmit or adapt the article content, providing a proper, prominent and unambiguous attribution to the authors in a manner that makes clear that the materials are being reused under permission of a Creative Commons License. Views, opinions and conclusions expressed in this research article are views, opinions and conclusions of the author(s). Open Access Publishing Group and European Journal of Physical Education and Sport Science shall not be responsible or answerable for any loss, damage or liability caused in relation to/arising out of conflict of interests, copyright violations and inappropriate or inaccurate use of any kind content related or integrated on the research work. All the published works are meeting the Open Access Publishing requirements and can be freely accessed, shared, modified, distributed and used in educational, commercial and non-commercial purposes under a [Creative Commons attribution 4.0 International License \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/).