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Research Article

Prevalence of Ankle Sprain in Recreational Football Players of Peshawar Sports Complex, Peshawar, Pakistan

Mohammad Shoaib Khan[1], Sana Ullah[2], Atif Nazir[3], Neamat Ullah[2]

[1]Rehman Medical Institute, Hayatabad, Peshawar, Khyber Pakhtunkhwa, Pakistan
[2]Abasyn University, Peshawar, Khyber Pakhtunkhwa, Pakistan
[3]Khyber Medical University, Peshawar, Khyber Pakhtunkhwa, Pakistan
***Correspondence:** shoaibphysiotherapist@gmail.com

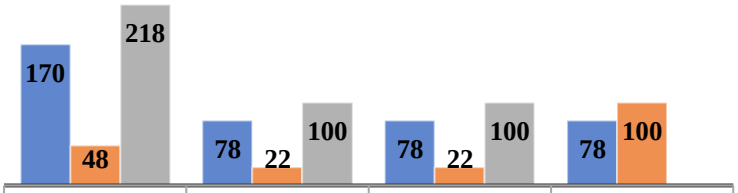
Abstract

An ankle sprain is a common injury that can occur during recreational sports activities. They constitute 22% of all sports injuries reported in emergency departments of a hospital. Football players are especially vulnerable to ankle ligament injuries, posing biomechanical, functional, and financial risks. Moreover, severe injuries can lead to ligament sprains, reduced ankle mobility, and permanent limitations in athletic activities. The study employed a cross-sectional design and collected data from recreational football players at Qayyum Stadium in Peshawar. The sample size was 218, while the margin of error was 5% with a confidence level of 95%, and a convenient sampling technique was used to recruit participants. Data collection was performed using the foot and ankle outcome score (FAOS) questionnaire. A total of 119 players sprained their ankle out of 218 players. A Chi-square test was applied to assess the comparison of ankle sprain and quality of life. The study findings reveal that football players often suffer from ankle sprain injuries, negatively affecting their confidence and significantly associated with their quality of life.

Keywords: Prevalence, ankle sprain, recreational football, quality of life

1. Introduction

Ankle sprains are frequently reported as one of the most common injuries during recreational sports activities (Dizon and Reyes 2010), constituting up to 30% of all sports-related injuries (Waterman et al. 2011). Ankle sprains may lead to disability in 30-70% of patients, with symptoms persisting for up to six months (Zaheer, Jafri, and Waqas 2020), thereby posing challenges for individuals to maintain an active lifestyle (Wiersma et al. 2018). Numerous studies have assessed ankle sprain rates, with lateral ankle sprains being the most common lower-limb musculoskeletal injury among physically active individuals (Delahunt and Remus 2019, Lysdal et al. 2022). However, in football, there is a significant risk, constituting almost half of all sports-related injuries. The injury risk increases for individuals over 40 years old when compared to their younger counterparts (Krustrup et al. 2010). In the case of an ankle sprain, grade I lateral sprains occur in 45.3% of cases, grade II in 43.7%, and grade III in only 2% of athletes (Luciano and Lara 2012). The ligaments involved in the ankle sprain include the anterior tibiofibular ligament (ATFL), posterior tibiofibular ligament (PTFL), and calcaneofibular ligament (CFL), with the ATFL being the weakest and most frequently impacted (Giannini et al. 2014). Notably, the inward twisting of the ligament is the typical injury mechanism (Ferran and Maffulli 2006). On the



	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 18-35	170	78	78	78
Valid 36-45	48	22	22	100
Valid Total	218	100	100	

Figure 1: Frequency distribution of age of the study participants.

other hand, ankle injuries might be seen as one of the most prevalent forms of traumatic injury (Aslan et al. 2008). These types of injuries arise from repetitive micro-trauma, leading to tissue damage (Gates et al. 2012). However, wearing a brace can reduce the likelihood of re-injury for athletes who have previously suffered a sprain (Beynnon, Murphy, and Alosa 2002).

Previous studies have demonstrated that physical activity is highly recommended for a healthy lifestyle, reducing mortality, improving quality of life (QOL), and boosting cardiovascular health. Recreational football is a beneficial strategy for improving health, and addressing issues like cardiovascular disease, diabetes, obesity, and osteoporosis (Sarmento et al. 2020). A survey found that regular football training enhances bone strength and reduces fracture risk (Helge et al. 2010). However, ankle injuries are seen across different age groups of football players (Clifton et al. 2017). This study aims to determine the prevalence of ankle sprains among recreational football players and assess their impact on the individual's QOL.

2. Methods & Materials

A cross-sectional study was conducted at Qayyum Stadium in Peshawar over eight months. The sample size was 218. Participants were recruited using a non-probability convenient sampling technique. Prior to data collection, study approval was obtained from the head of the Physical Therapy Department and the Director General of Sports, Khyber Pakhtunkhwa. Ethical approval was also obtained from the Ethical Approval Committee of Abasyn University, Peshawar. Male football players aged 18-45 who were willing to participate in the study were included, while those with groin injuries, knee injuries, or a history of ankle surgery were excluded from the study. Consent forms were distributed, providing clear visual explanations regarding the aims and objectives. Participants were assured that the study findings would not harm them. Data collection utilized the Foot Ankle Outcome Score (FAOS) questionnaire, which included specific questions related to QOL, ankle sprain, and lack of confidence. The questionnaire instructions ensured accurate responses. FAOS questionnaire scores ranged from 0 to 100, where '0' indicates the most severe ankle sprain and '100' indicates no symptom. QOL results were evaluated through the application of the following formula:

QOL subscale score = *100 − QOL sum ×100/16* (Shazadeh Safavi et al. 2019).

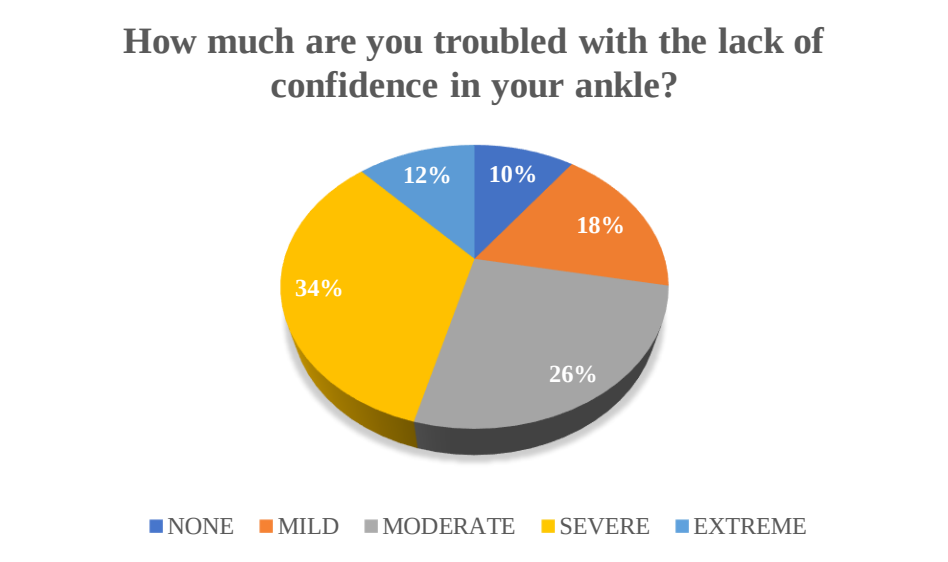


Figure 2: This figure shows the percentage of players who experienced lack of confidence (LOC).

Descriptive statistics were used for demographics, with continuous variables reported as mean and standard deviation, and categorical data presented as the number (percentage). Chi-square tests were applied to compare the data between ankle sprain and QOL.

3. Results

A total of 218 male participants were included in the research. Among them, 170 individuals (78%) fell in the age range of 18 to 35 years. Whereas, 48 individuals (22%) of the participants, were aged between 36 and 45 years (Figure 1). Table 1 demonstrates the occurrence of ankle sprains among recreational football players, with 119 (54.6%) out of the total 218 players reporting such injuries, while the remaining 99 players (45.4%) did not experience any ankle sprains.

Table 2 illustrates the frequency distribution of QOL of football players. Out of the 218 participants, 120 (55.0%) responded that ankle sprain affected their QOL. On the other hand, 98 (45.0%) participants responded that the ankle injury did not have any significant effect on their QOL.

The mean and standard deviation (SD) for ankle sprain score among recreational football players were 60.73±12.63, based on 218 observations. Whereas, the QOL mean and SD were 62.56±18.05. The statistical analysis revealed a significant association between ankle sprains and QOL, indicating a noteworthy impact of ankle sprains on individuals' QOL.

Of the total of 218 players who responded, 18% (39 players) experienced mild Lack of Confidence (LOC) after an ankle sprain, 26% (54 players) reported moderate LOC, 34% (74 players) demonstrated severe LOC, and 12% (26 players) exhibited an extreme level of LOC. Furthermore, 10% (22 players) reported no ankle sprain injury-associated LOC.

4. Discussion

Participation in recreational football training has been associated with enhanced bone mass, leading to increased body mass density and lean body mass (New 2001). A study in a university revealed that 37 players missed a total of 81.5 weeks of competition, with almost half (45.9%) being side-lined for one or more weeks due to ankle injuries. Interestingly, 55% of male players did not seek medical attention for their ankle

Table 1: This table shows the frequency of ankle sprain in footballers.

Response	Frequency	Percentage (%)	Cumulative Percentage (%)
Yes	119	54.6	54.6
No	99	45.4	100.0
Total	218	100.0	

Table 2: This table shows the frequency of participants whose QOL was affected.

Response	Frequency	Percentage (%)	Cumulative Percentage (%)
Yes	120	55.0	55.0
No	98	45.0	100.0
Total	218	100.0	

injuries and only 40.7% underwent rehabilitation with a physiotherapist (Dönmez et al. 2018). The study emphasizes the need for preventive strategies to minimize the rehabilitation cost associated with ankle injuries (McKay et al. 2001). Football had the highest injury rate among sports, followed by basketball, wrestling, and girls' soccer. Football and wrestling accounted for a disproportionately high percentage of serious injuries, underscoring the importance of efforts to reduce injury severity in these sports (Darrow et al. 2009, Malina et al. 2006).

A previous study analyzed the players with recreational football-related injuries preventing them from performing daily activities; a majority (55%) of the participants with ankle sprain described impaired QOL. In our study, 55% of individuals with ankle sprains reported a decline in QOL, aligning with the previous finding (Dönmez et al. 2018). Ankle and foot injuries in sports affect athletes of all ages, ranging from 12 to 56. Ankle sprains are a frequent sports injury, with our study reporting a 54% occurrence, consistent with other studies (Luciano and Lara 2012). The incidence of ankle sprains was higher in the male group below 40 years of age. Furthermore, the age group was further split into two sub-groups i.e. 78% of athletes were aged 18-35, and 22% of athletes were aged 36-45.

However, in our study, we collected data from 218 football players with an age range of 18 to 45 years. Our data group has similarities with a previous article (Fong et al. 2007). Another study in Sweden reported that the incidence rate in football activity was 7.8 injuries for every 1000 hours, which means that football ranks eighth out of 31 recreational and competitive sports when it comes to the risk of injury (Krustrup et al. 2010).

A study reported a frequency of ankle sprains in football players of 23% (Amjad, Ahmad, and Tanweer 2019), whereas our study found that 54% of the players were affected by ankle sprains. The findings of our study are in agreement with previous studies. Although our study had limitations, such as a shorter duration,

male-only participants, and fewer resources, it highlights the importance of preventive measures.

5. Conclusions

We concluded that ankle sprains are prevalent among recreational football players, affecting 54% of individuals. Moreover, 55% reported a decline in QOL, emphasizing the need for preventive strategies and measures to address these injuries in the sporting community. Moreover, a substantial number (85%) of players who suffered from ankle sprains reported experiencing LOC, ranging from mild to extreme.

Conflict of Interest

All the authors declare no conflicts of interest.

Funding

There were no funding contributions for this research from any source.

Study Approval

Approval was obtained from the head of the physical therapy department at Abasyn University Peshawar, Pakistan

Consent Forms

Each and every participant signed a consent form before participation in the research.

Authors Contributions

MSK and NU conceptualized the study, MSK, NU, and SU did the experimental part and analysis of the results, AN supervised the whole project and the final manuscript.

Data Availability

All the data relevant to this study is with the authors.

Acknowledgments

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References

Amjad, Fareeha, Ashfaq Ahmad, and Syed Abdul Wasay Tanweer. 2019. "Frequency of Ankle Sprain in Footballer of Different Clubs of Lahore." *Pakistan Journal of Physical Therapy (PJPT)*:03-06.

Aslan, Emine, Ayse Karaduman, Yavuz Yakut, Bahar Aras, Ibrahim Engin Simsek, and Naciye Yaglý. 2008. "The cultural adaptation, reliability and validity of neck disability index in patients with neck pain: a Turkish version study." *Spine* no. 33 (11):E362-E365.

Beynnon, Bruce D, Darlene F Murphy, and Denise M Alosa. 2002. "Predictive factors for lateral ankle sprains: a literature review." *Journal of athletic training* no. 37 (4):376.

Clifton, Daniel R, Rachel M Koldenhoven, Jay Hertel, James A Onate, Thomas P Dompier, and Zachary Y Kerr. 2017. "Epidemiological patterns of ankle sprains in youth, high school, and college football." *The American journal of sports medicine* no. 45 (2):417-425.

Darrow, Cory J, Christy L Collins, Ellen E Yard, and R Dawn Comstock. 2009. "Epidemiology of severe injuries among United States high school athletes: 2005-2007." *The American journal of sports medicine* no. 37 (9):1798-1805.

Delahunt, Eamonn, and Alexandria Remus. 2019. "Risk factors for lateral ankle sprains and chronic ankle instability." *Journal of athletic training* no. 54 (6):611-616.

Dizon, Janine Margarita R, and Josephine Joy B Reyes. 2010. "A systematic review on the effectiveness of external ankle supports in the prevention of inversion ankle sprains among elite and recreational

players." *Journal of Science and medicine in sport* no. 13 (3):309-317.

Dönmez, Gürhan, Feza Korkusuz, Levent Özçakar, Yigitcan Karanfil, Erhan Dursun, Savas Kudas, and Mahmut Nedim Doral. 2018. "Injuries among recreational football players: results of a prospective cohort study." *Clinical journal of sport medicine* no. 28 (3):249-254.

Ferran, Nicholas Antonio, and Nicola Maffulli. 2006. "Epidemiology of sprains of the lateral ankle ligament complex." *Foot and ankle clinics* no. 11 (3):659-662.

Fong, Daniel Tik-Pui, Youlian Hong, Lap-Ki Chan, Patrick Shu-Hang Yung, and Kai-Ming Chan. 2007. "A systematic review on ankle injury and ankle sprain in sports." *Sports medicine* no. 37:73-94.

Gates, Margaret A, Darren W Holowka, Jennifer J Vasterling, Terence M Keane, Brian P Marx, and Raymond C Rosen. 2012. "Posttraumatic stress disorder in veterans and military personnel: epidemiology, screening, and case recognition." *Psychological services* no. 9 (4):361.

Giannini, Sandro, Alberto Ruffilli, Gherardo Pagliazzi, Antonio Mazzotti, Giulia Evangelisti, Roberto Buda, and Cesare Faldini. 2014. "Treatment algorithm for chronic lateral ankle instability." *Muscles, ligaments and tendons journal* no. 4 (4):455.

Helge, Eva Wulf, Per Aagaard, Markus D Jakobsen, Emil Sundstrup, Morten B Randers, Magnus K Karlsson, and Peter Krustrup. 2010. "Recreational football training decreases risk factors for bone fractures in untrained premenopausal women." *Scandinavian journal of medicine & science in sports* no. 20:31-39.

Krustrup, Peter, Per Aagaard, Lars Nybo, Jeffrey Petersen, Magni Mohr, and Jens Bangsbo. 2010. "Recreational football as a health promoting activity: a topical review." *Scandinavian journal of medicine & science in sports* no. 20:1-13.

Luciano, Alexandre de Paiva, and Luiz Carlos Ribeiro Lara. 2012. "Epidemiological study of foot and ankle injuries in recreational sports." *Acta ortopedica brasileira* no. 20:339-342.

Lysdal, Filip Gertz, Yuehang Wang, Eamonn Delahunt, Dominic Gehring, Kyle B Kosik, Tron Krosshaug, Yumeng Li, Kam-Ming Mok, Kati Pasanen, and Alexandria Remus. 2022. "What have we learnt from quantitative case reports of acute lateral ankle sprains injuries and episodes of 'giving-way'of the ankle joint, and what shall we further investigate?" *Sports Biomechanics* no. 21 (4):359-379.

Malina, Robert M, Peter J Morano, Mary Barron, Susan J Miller, Sean P Cumming, and Anthony P Kontos. 2006. "Incidence and player risk factors for injury in youth football." *Clinical Journal of Sport Medicine* no. 16 (3):214-222.

McKay, Goldie, Patricia Goldie, Warren Payne, and B Oakes. 2001. "Ankle injuries in basketball: injury rate and risk factors." *British journal of sports medicine* no. 35 (2):103.

New, Susan A. 2001. "Exercise, bone and nutrition." *Proceedings of the Nutrition Society* no. 60 (2):265-274.

Sarmento, Hugo, Filipe Manuel Clemente, Adilson Marques, Zoran Milanovic, Liam David Harper, and Antonio Figueiredo. 2020. "Recreational football is medicine against non-communicable diseases: A systematic review." *Scandinavian journal of medicine & science in sports* no. 30 (4):618-637.

Shazadeh Safavi, Pejma, Cory Janney, Daniel Jupiter, Daniel Kunzler, Roger Bui, and Vinod K Panchbhavi. 2019. "A systematic review of the outcome evaluation tools

for the foot and ankle." *Foot & ankle specialist* no. 12 (5):461-470.

Waterman, Brian R, Philip J Belmont Jr, Kenneth L Cameron, Steven J Svoboda, Curtis J Alitz, and Brett D Owens. 2011. "Risk factors for syndesmotic and medial ankle sprain: role of sex, sport, and level of competition." *The American journal of sports medicine* no. 39 (5):992-998.

Wiersma, Alexandria J, Lina Brou, Sarah K Fields, R Dawn Comstock, and Zachary Y Kerr. 2018. "Epidemiologic comparison of ankle injuries presenting to US emergency departments versus high school and collegiate athletic training settings." *Injury epidemiology* no. 5 (1):1-10.

Zaheer, Anna, Munam Raza Jafri, and Muhammad Waqas. 2020. "Frequency and Reoccurrence of Ankle Sprain in Young Male Athletes of University of Lahore." *Pakistan Journal of Physical Therapy (PJPT)*:07-11.