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Prevalence of Musculoskeletal Injuries and its Impact on Quality of Life of Professional Futsal Players in Peshawar Pakistan

Syeda Najma Khatoon[1], Zohra Abbas[1], Fahmeena Zahid[1], Shehanil Afridi[1], Muhammad Shahzeb Khan[1], Muhammad Junaid[1], Muheebur Rehman[2*], Huma Zia[1]

[1]Iqra National University, Peshawar
[2]Abasyn University, Peshawar
[*]*Corresponding Author: Muheebur Rehman, Assistant Professor; Email: muheebjan291@yahoo.com*
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ABSTRACT

Background: Musculoskeletal injuries, particularly prevalent in high-impact sports like futsal, can have significant repercussions on athletes' functionality and quality of life (QOL). Futsal, an intense variant of soccer played indoors, is associated with a high incidence of such injuries, especially in the lower limbs.

Objective: This study aims to assess the prevalence of musculoskeletal injuries and their impact on the QOL of professional male futsal players in Peshawar, Pakistan.

Methods: A cross-sectional study was conducted at three prominent futsal academies in Peshawar, involving 184 male players. Data on injuries and QOL were collected using questionnaires adapted from the Musculoskeletal Injuries Report for Brazilian Athletes and the WHO Quality of Life Scale-Brief. The study received ethical approval from the Institutional Review Board of Iqra National University, Peshawar.

Results: The findings revealed that the most common injuries were to the ankle (34.78%) and knee (33.70%). A majority of injuries were due to contact (72.28%), with a significant proportion resulting from non-contact mechanisms (27.72%). Regarding QOL, 55% of the participants had high QOL scores, while 16% reported low QOL.

Conclusion: The study highlights a high prevalence of lower limb injuries among professional futsal players in Peshawar, with a significant impact on their QOL. These findings underline the need for focused injury prevention and management strategies in futsal, along with enhanced support for injured athletes.

Keywords: Futsal, Musculoskeletal Injuries, Quality of Life, Sports Injuries, Pakistan, Lower Limb Injuries.

INTRODUCTION

Musculoskeletal injuries encompass damage to the body's muscles or skeleton resulting from repetitive, high-impact, and strenuous activities (1). These injuries can lead to temporary or permanent loss of function, premature departure from one's profession, and diminished capacity to engage in daily activities (2). In the context of sports, these injuries often occur due to the transfer of energy during physical activities, leading to physiological dysfunction or structural changes (3). Such injuries can significantly impede an athlete's ability to perform and acquire new skills (4).

Sports injuries frequently arise from inadequate training programs, improper joint alignment, and incorrect movement patterns, which weaken muscles, tendons, and ligaments (5). Athletes involved in high-intensity activities such as jumping, running, and making abrupt directional changes are particularly susceptible to acute sports injuries (6). Young male athletes, especially in rugby, soccer, and football, have been observed to have a higher injury rate. In soccer, injuries often occur without direct contact, with the lower limbs, including the ankle, knee, and thigh, being the most affected areas (7).

Futsal, a term originating from Brazil and Uruguay in the 1930s and 1940s, combines the Spanish words for 'hall' (Sala) and 'football' (Futbol) (8). This indoor soccer variant is played on synthetic turf with a smaller, less bouncy ball. Futsal is characterized by its high-energy and unpredictable nature (9), requiring players to be adept in both offensive and defensive roles, which distinguishes it from other sports (10, 11).

Futsal players are highly susceptible to a wide range of injuries due to the repeated strain on anatomical structures during play, leading to microtraumas (12). Common injury sites include the head, neck, upper limbs, trunk, and lower limbs, with the foot and ankle being particularly vulnerable. According to the National Collegiate Athletic

Association, futsal ranks among the top ten sports for injury frequency, with rates between 20.3 and 55.2 injuries per 10,000 hours of play (5). Soccer, including its variants like futsal, is the most popular sport globally, with around 200 million participants at various levels (13).

The World Health Organization (WHO) defines Quality of Life (QOL) as an individual's perception of their position in life, within the cultural context and value systems in which they live, and in relation to their goals, expectations, standards, and concerns (14). Injuries in sports, while unavoidable, can overshadow the positive aspects of sporting activities and adversely affect the quality of life of athletes (15). Research indicates that playing football can significantly impact the future health of UK footballers (16), with the development of osteoarthritis (OA) linked to negative outcomes across all aspects of Health-Related Quality of Life (HRQL).

The rationale for this study stems from the critical need to address the gap in research regarding musculoskeletal injuries in futsal, particularly in the context of Peshawar, Pakistan. Futsal, a sport with unique physical demands and growing popularity, lacks specific data on injury prevalence and its consequent impact on players' quality of life in this region. Understanding these factors is essential for developing targeted injury prevention and management strategies, which are currently underrepresented in sports health literature, especially in Pakistan. This study is not only pivotal for enhancing the safety and career longevity of futsal players but also contributes significantly to the broader understanding of sports-related injuries and athlete health in high-intensity sports. Therefore, the objective of study was to determine the Prevalence of Musculoskeletal Injuries and its Impact on Quality of Life of Professional Futsal Players.

MATERIAL AND METHODS

This study, investigating the prevalence of musculoskeletal injuries and their impact on the quality of life of professional futsal players in Peshawar, Pakistan, was approved by the Institutional Review Board of Iqra National University (INU) Peshawar. Data collection was conducted at three notable futsal academies: JKD Futsal Academy, Goals Futsal Academy in Al Haram Town, and Total Futsal Academy in Garrison Park.

A cross-sectional study design was employed. The research began with the proposal being presented to the institutional review board. Once approval was granted, permissions were sought and received from the CEOs of the respective futsal academies. Participant recruitment followed, adhering to established inclusion and exclusion criteria. Consent forms were provided to each participant to ensure informed participation. Subsequently, questionnaires were distributed to collect detailed data on musculoskeletal injuries and quality of life. These questionnaires were adapted from the Musculoskeletal Injuries Report for Brazilian Athletes and the WHO Quality of Life Scale-Brief (WHOQOL-Scale Brief) (17, 18).

Ethical compliance was a priority, with all participants being fully informed about the study's objectives and their consent obtained, ensuring confidentiality of the information provided.

In terms of data analysis, frequency tables were used to assess the prevalence of musculoskeletal injuries among the young male population. The chi-square test was applied to determine significant differences between the incidence of injuries and their impact on quality of life. Data were expressed as mean ± standard deviation, with a P value of < 0.05 considered statistically significant. This methodological approach provided a thorough understanding of the injury patterns and their effects on athletes' quality of life, contributing important insights to sports medicine and injury prevention in the realm of futsal.

RESULTS

Table 1 Demographic Information and BMI Categories

Academy	Frequency	Percentage
JKD Futsal Academy	79	42.2%
Goal Futsal Academy, Al Haram Town	48	26.3%
Total Futsal Academy, Garrison Park	57	30.6%
BMI Distribution		
Underweight	20	10.8%
Normal	81	44.1%

Academy	Frequency	Percentage
Obese	16	8.6%
Overweight	67	36%
Total Participants	184	100%

The demographic data and BMI (Body Mass Index) categories of participants from three different futsal academies are presented in Table 1. The data encompasses 184 participants in total, with the majority coming from the JKD Futsal Academy, accounting for 42.2% (79 participants). Goal Futsal Academy in Al Haram Town and Total Futsal Academy in Garrison Park follow with 26.3% (48 participants) and 30.6% (57 participants) respectively. When examining BMI distribution, the largest group falls within the 'Normal' BMI category, representing 44.1% (81 participants). This is followed by the 'Overweight' category at 36% (67 participants). The 'Underweight' and 'Obese' categories are less represented, with 10.8% (20 participants) and 8.6% (16 participants) respectively. These figures indicate a diverse BMI range among the participants, with a significant portion having a BMI within the normal range, but also a notable presence of overweight individuals.

Table 2 Injury Distribution, Type, and Quality of Life (QOL) Scoring

Joints	Frequency	Percentage of Injuries
Shoulder	12	6.52
Elbow	10	5.43
Hand	10	5.43
Hip	7	3.80
Knee	62	33.70
Ankle	64	34.78
Other	19	10.33
Total Injuries	184	100.00
Injury Type		
Contact	133	72.28%
Non-Contact	51	27.72%
QOL Scoring		
Low/Bad QOL (<45)	30	16%
Moderate QOL (45-65)	51	27%
High QOL (>65)	103	55%
Total Participants	184	100%

Table 2 provides insights into the injury distribution, types, and Quality of Life (QOL) scores among the participants. The data reveals that ankle injuries are the most common, constituting 34.78% (64 cases) of the total injuries, closely followed by knee injuries at 33.70% (62 cases). Other joint injuries, including those to the shoulder, elbow, hand, and hip, are comparatively less frequent. The table also segregates injuries into 'Contact' and 'Non-Contact' types, with contact injuries being predominant at 72.28% (133 cases). Non-contact injuries make up 27.72% (51 cases). In terms of Quality of Life scoring, a majority of participants (55%, 103 individuals) are rated with high QOL (scores above 65), indicating a generally positive impact of their involvement in the sport on their overall life quality. However, there are notable instances of low (16%, 30 individuals) and moderate (27%, 51 individuals) QOL scores, highlighting areas where sports engagement and injury management might be affecting participants' life quality. This multifaceted data suggests a need for focused injury prevention and management strategies, especially concerning high-incidence areas like the knee and ankle, to enhance the overall well-being and sports experience of the participants.

DISCUSSION

The discussion of the cross-sectional study on male professional futsal players focuses on the prevalence of musculoskeletal injuries and their impact on quality of life (QOL). The study, involving 184 participants from JKD

Peshawar, Goal Futsal Academy Al Haram Town, and Total Futsal Academy Garrison Park, reveals significant insights into the patterns of injuries in this sport and their broader implications.

Musculoskeletal injuries in futsal predominantly affect the lower extremities, consistent with the demands and physicality of the sport. Our study corroborates findings from previous research, such as those by ULUOZ (2016) and Heidt et al. (2000), highlighting that the most common injuries occur at the ankle (34.3%) and knee (33.3%) (19, 20). This trend is in line with the nature of futsal, which requires intensive use of the lower limbs for dribbling, tackling, and abrupt direction changes. The high prevalence of lower limb injuries, particularly at the ankle and knee, can be attributed to the sport's requirements for sudden movements, tackling, and frequent changes in direction, which place considerable stress on these joints.

The study also differentiates between contact and non-contact injuries, with a significant percentage (53%) of injuries occurring due to non-contact mechanisms. This finding is slightly at variance with some previous studies, such as that by Gayardo et al. (2012), which found a more balanced distribution between contact and non-contact injuries (21). The predominance of non-contact injuries in our study could be reflective of the sport's evolving dynamics, where high-speed movements and quick directional changes are becoming more prevalent, increasing the risk of non-contact injuries.

An essential aspect of the study is the association between injuries and QOL. The findings suggest a significant relationship, as evidenced by the application of the Chi-square test, indicating that injuries can notably impact an athlete's quality of life. This is supported by research conducted on different athletic populations, such as the study by Watson et al. (2023) on female volleyball players, which reported a decrease in QOL due to in-season injuries (22). Similarly, the research by Andy P. Turner et al. (2000) highlighted the long-term consequences of sports-related injuries (23, 24), including the development of osteoarthritis and the subsequent impact on life quality in later stages (25, 26).

The study, while providing valuable insights, has certain limitations that warrant attention. Primarily, the focus on male professional players from specific academies in Peshawar may limit the generalizability of the findings to broader populations, including female players and those from different geographical or skill levels. Additionally, the cross-sectional nature of the study precludes the establishment of causal relationships between futsal participation and injury or QOL outcomes. Future research should consider longitudinal designs to track injury patterns over time and include a more diverse participant pool to enhance the applicability of the results. Moreover, integrating qualitative methods could provide deeper insights into the personal experiences and coping strategies of injured players, further enriching our understanding of the impact of musculoskeletal injuries in futsal.

CONCLUSION

In conclusion, this study underscores the high prevalence of lower limb injuries, particularly in the ankle and knee, among male professional futsal players. The predominance of non-contact injuries suggests a need for focused training and preventive strategies to mitigate these risks. Additionally, the significant impact of these injuries on the quality of life of the athletes highlights the importance of comprehensive injury management and support for affected individuals. This study not only contributes to the understanding of injury patterns in futsal but also emphasizes the broader implications of these injuries on athletes' well-being.

REFERENCES

1. Tanir H, Çetinkaya E. The Evaluation of Musculoskeletal Disorders Seen in Footballers with Regard to Dominant Foot Preference. Journal of Education and Learning. 2019;8(2):182-7.
2. Bulat M, Can NK, Arslan YZ, Herzog W. Musculoskeletal simulation tools for understanding mechanisms of lower-limb sports injuries. Current Sports Medicine Reports. 2019;18(6):210-6.
3. Nair C. The prevalence, risk factors and management of musculoskeletal injuries in male amateur indoor soccer players in the eThekwini Municipality 2022.
4. Naser N, Ali A, Macadam P. Physical and physiological demands of futsal. Journal of Exercise Science & Fitness. 2017;15(2):76-80.

5. Gene-Morales J, Saez-Berlanga A, Bermudez M, Flández J, Fritz NB, Colado JC. Incidence and prevalence of injuries in futsal: A systematic review of the literature. 2021.
6. Browne GJ, Barnett PL. Common sports-related musculoskeletal injuries presenting to the emergency department. Journal of Paediatrics and Child Health. 2016;52(2):231-6.
7. Cordioli Junior JR, Cordioli DFC, Gazetta CE, Silva AGd, Lourenção LG. Quality of life and osteomuscular symptoms in workers of primary health care. Revista Brasileira de Enfermagem. 2020;73.
8. Oliveira Filho JHd. Sports migrants in 'Central'and 'Eastern'Europe: beyond the existing narratives. Vibrant: Virtual Brazilian Anthropology. 2020;17.
9. Fiorese L, Codonhato R, JÚNIOR JRADN, Garcia-Mas A, VISSOCI JRN. History and development of Sport Psychology in Latin America. Int J Sport Psychol. 2020;51:528-44.
10. Jianxi W, Xianxiao H, Lei Z, Shushu X. Injuries of futsal players and prevention in China. International Journal of Sports and Exercise Medicine. 2019;5(9):1-8.
11. Ghasemi F, Rahmani R, Behmaneshpour F, Fazli B. Quality of work life among surgeons and its association with musculoskeletal complaints. Cogent Psychology. 2021;8(1):1880256.
12. Fritz B, Parkar AP, Cerezal L, Storgaard M, Boesen M, Åström G, et al., editors. Sports imaging of team handball injuries. Seminars in musculoskeletal radiology; 2020: Thieme Medical Publishers 333 Seventh Avenue, New York, NY 10001, USA.
13. Pelana R, Taufik MS, Setiakarnawijaya Y, Sukur A, Raharjo S. Futsal Training Model with Futsal Measurement Tests for College Student-Athletes. Talent Development & Excellence. 2020;12(1):4398-410.
14. Sinha BRK. Introduction: An overview of the concept of quality of life. Multidimensional Approach to Quality of Life Issues: A Spatial Analysis. 2019:3-23.
15. Harris EM. Self-Compassion, Psychological Flexibility, Hardiness, and a Hint of Harmonious Passion: The Recipe for Building Athletes Adaptable to the Stress of Sport Related Injury: The University of Regina (Canada); 2022.
16. Fernandes GS, Parekh SM, Moses J, Fuller CW, Scammell B, Batt ME, et al. Depressive symptoms and the general health of retired professional footballers compared with the general population in the UK: a case–control study. BMJ open. 2019;9(9):e030056.
17. Abbasi-Ghahramanloo A, Soltani-Kermanshahi M, Mansori K, Khazaei-Pool M, Sohrabi M, Baradaran HR, et al. Comparison of SF-36 and WHOQoL-BREF in measuring quality of life in patients with type 2 diabetes. International journal of general medicine. 2020:497-506.
18. Goes RA, Lopes LR, Cossich VRA, de Miranda VAR, Coelho ON, do Carmo Bastos R, et al. Musculoskeletal injuries in athletes from five modalities: a cross-sectional study. BMC musculoskeletal disorders. 2020;21:1-9.
19. ULUÖZ E. Investigation of sport injury patterns in female futsal players. International Journal of Sport Culture and Science. 2016;4(4):474-88.
20. Heidt RS, Sweeterman LM, Carlonas RL, Traub JA, Tekulve FX. Avoidance of soccer injuries with preseason conditioning. The American journal of sports medicine. 2000;28(5):659-62.
21. Gayardo A, Matana SB, Silva MRd. Prevalence of injuries in female athletes of Brazilian futsal: a retrospective study. Revista Brasileira de Medicina do Esporte. 2012;18:186-9.
22. Watson A, Haraldsdottir K, Biese K, Schwarz A, Hetzel S, Reardon C, et al. Impact of COVID-19 on the physical activity, quality of life and mental health of adolescent athletes: a 2-year evaluation of over 17 000 athletes. British journal of sports medicine. 2023;57(6):359-63.
23. Turner AP, Barlow JH, Heathcote-Elliott C. Long term health impact of playing professional football in the United Kingdom. British journal of sports medicine. 2000;34(5):332-6.
24. Runacres A, Mackintosh KA, McNarry MA. Health consequences of an elite sporting career: long-term detriment or long-term gain? A meta-analysis of 165,000 former athletes. Sports Medicine. 2021;51:289-301.
25. Rutherford A, Stewart W, Bruno D. Heading for trouble: is dementia a game changer for football? : BMJ Publishing Group Ltd and British Association of Sport and Exercise Medicine; 2019. p. 321-2.
26. Cejudo A, Ruiz-Pérez I, Hernández-Sánchez S, De Ste Croix M, Sainz de Baranda P, Ayala F. Comprehensive Lower Extremities Joints Range of Motion Profile in Futsal Players. Frontiers in psychology. 2021;12:658996.

