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Original Article

Musculoskeletal Problems in Cricket Players in Rawalpindi and Islamabad

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ABSTRACT

Background: Cricket involves repetitive high-intensity actions that impose significant musculoskeletal (MSK) demands on athletes. These movements predispose players to injuries affecting the shoulder, spine, and upper extremities. While studies in Pakistan have reported injury prevalence in Lahore and Sindh, epidemiological data from Rawalpindi and Islamabad remain scarce despite their vibrant cricketing academies. Objective: To determine the frequency and distribution of musculoskeletal problems among cricket players in Rawalpindi and Islamabad. Methods: A cross-sectional observational study was conducted between June 2024 and January 2025 among 278 male cricket players aged 18–32 years with at least one year of playing experience. Participants were recruited from clubs and academies through convenience sampling. Data were collected using a self-structured questionnaire and the Nordic Musculoskeletal Questionnaire. Descriptive and inferential analyses were performed in SPSS v25. Frequencies, percentages, 95% confidence intervals, and chi-square tests were reported. Ethical approval was obtained, and informed consent was secured from all participants. Results: The shoulder was the most frequently affected region, reported by 32.4% of players over the past 12 months, followed by lower back (23.4%) and wrist/hand (20.9%). In the past 7 days, both shoulder and lower back problems were reported by 6.5% of players. Shoulder injuries accounted for the highest rates of activity limitation (20.9%) and physician visits (15.8%). Conclusion: Shoulder and lower back problems represent the greatest MSK burden among Rawalpindi and Islamabad cricketers. These findings highlight the need for preventive physiotherapy, structured conditioning, and workload monitoring strategies to safeguard player health.
Keywords: musculoskeletal problems, cricket, shoulder pain, back pain, athletes

INTRODUCTION

Cricket is among the most widely played sports globally, engaging over 120 million participants across more than 100 countries, and holds a particularly central place in South Asia, where it functions both as a professional and cultural pursuit (1,2). Despite being categorized as a non-contact sport, cricket involves high-intensity activities such as sprinting, throwing, batting, bowling, and diving, which impose substantial mechanical demands on the musculoskeletal (MSK) system (3,4). These repetitive and strenuous movements predispose players to musculoskeletal disorders (MSDs), including acute injuries such as sprains and strains, as well as chronic conditions affecting tendons, ligaments, bones, and joints. The impact of such injuries is not only physical but also socioeconomic, contributing to missed training, limited match participation, reduced career longevity, and potential long-term health consequences (5,6).

The epidemiology of MSDs in cricket is influenced by player role and workload. Fast bowlers are at high risk for lumbar spine injuries due to repetitive spinal rotation and excessive ground reaction forces (7,8). Batsmen are prone to hand and rib injuries from repetitive impacts, while wicketkeepers face chronic stress injuries associated with prolonged crouching postures (9,10). Prior epidemiological studies consistently identify the shoulder, lower back, and wrist/hand as the most vulnerable anatomical regions, with prevalence estimates ranging from 23% to 44% among cricket athletes (11,12). In Pakistan, research on musculoskeletal health in cricketers remains limited and region-specific. Studies conducted in Lahore and Sindh reported high rates of lumbar and shoulder problems (13,14), yet data from Rawalpindi and Islamabad—two active cricket hubs with numerous clubs and academies—are lacking.

Identifying the burden of musculoskeletal problems within this local population is crucial for establishing evidence-based preventive strategies and guiding physiotherapy interventions. Previous investigations from Pakistan and internationally highlight anthropometric factors, training load, and biomechanical inefficiencies as critical contributors to MSK injuries (15,16). However, comprehensive analyses addressing both the frequency and anatomical distribution of musculoskeletal issues across diverse player roles remain sparse. The absence of such data in the Rawalpindi-Islamabad region represents a significant gap in national cricket medicine research.

Therefore, this study aimed to determine the frequency and distribution of musculoskeletal problems among male cricket players in Rawalpindi and Islamabad, with the objective of informing targeted injury prevention and rehabilitation strategies.

MATERIAL AND METHODS

This study employed a cross-sectional observational design to estimate the frequency and distribution of musculoskeletal problems among cricket players in Rawalpindi and Islamabad, Pakistan. The study was conducted between June 24, 2024, and January 7, 2025, within cricket clubs and academies that represent the primary training hubs for players in the twin cities. The cross-sectional approach was selected because it allows for efficient assessment of the prevalence of musculoskeletal problems in a defined population at a single point in time, thereby providing epidemiological insight that can inform preventive strategies.

Eligible participants were male cricket players aged 18–32 years with a minimum of one year of continuous cricket experience and a routine of at least five playing sessions per week, averaging four to six hours daily. Players with a history of traumatic injuries, congenital musculoskeletal anomalies, steroid use for performance enhancement, or pre-existing chronic conditions such as hypertension or diabetes mellitus were excluded to minimize confounding effects unrelated to cricket participation.

Recruitment was carried out through a non-probability convenience sampling strategy. Study information was disseminated to players and coaching staff, and individuals meeting the eligibility criteria were invited to participate. Written informed consent was obtained prior to data collection.

A total of 294 questionnaires were distributed, of which 278 (94.6%) were returned completed and deemed eligible for analysis, yielding the final study sample. The sample size was estimated using RaoSoft software with a 95% confidence level and a 5% margin of error to ensure adequate statistical power for prevalence estimates. Demographic data including age, height, weight, body mass index (BMI), years of playing experience, daily training duration, and competitive level (district, provincial, or national) were recorded. Participants also self-identified their primary role as batsman, bowler, or all-rounder.

Musculoskeletal problems were assessed using two instruments. A self-structured questionnaire captured demographic and training-related variables, while the validated Nordic Musculoskeletal Questionnaire (NMQ) was employed to record site-specific musculoskeletal problems reported during the past 12 months and past 7 days (17). Anatomical regions included in the NMQ were the neck, shoulder, elbow, wrist/hand, upper back, lower back, hip/thigh, knee, and ankle/foot (18).

To enhance reproducibility, the NMQ was explained by trained data collectors to ensure standard interpretation, and all responses were reviewed at the time of completion to minimize missing or inconsistent entries. Problems were categorized by site, and injuries such as strains, sprains, or overuse symptoms were coded according to self-reported descriptions.

Potential sources of bias were addressed by employing a standardized administration protocol for all participants, ensuring anonymity of responses to reduce reporting bias, and excluding players with medical conditions that could confound the relationship between cricket participation and musculoskeletal health. Selection bias was minimized by recruiting across multiple academies, though the convenience design inherently limited randomization.

Data were entered and analyzed using SPSS version 25 (IBM Corp., Chicago, IL, USA). Continuous variables such as age, BMI, and training hours were summarized using means and standard deviations, while categorical variables including anatomical site of injury and player role were presented as frequencies and percentages. Subgroup comparisons, such as differences in musculoskeletal problems across player roles or levels of competition, were explored using chi-square tests for categorical variables and analysis of variance for continuous measures, with a significance threshold of $p < 0.05$. Confidence intervals were reported for major prevalence estimates to enhance statistical rigor. Missing data were managed through listwise deletion to maintain analytical validity.

Ethical approval for the study was obtained from the Ethical Review Committee of the Margalla Institute of Health Sciences, Rawalpindi (Ref. No. AK/242/24, dated June 24, 2024). Confidentiality of participants was maintained, and all procedures conformed to the Declaration of Helsinki.

RESULTS

The demographic analysis of the 278 cricket players revealed a relatively young athletic population with a mean age of 21.2 years (95% CI: 20.8–21.6) and a mean BMI of 21.8 kg/m² (95% CI: 21.5–22.1), consistent with normal weight ranges for athletes. On average, participants had 4.1 years of playing experience, dedicating approximately 5.1 hours per day to training. Nearly 89% competed at the district level, underscoring that the findings predominantly represent semi-professional cricketers. Batsmen comprised the largest subgroup (38.5%), followed by bowlers (32.7%) and all-rounders (28.8%), allowing comparison across diverse roles.

Over the preceding 12 months, musculoskeletal problems were reported most frequently in the shoulder, affecting 32.4% of players (n = 90; 95% CI: 27.1–37.7). Lower back complaints were the second most common at 23.4% (n = 65; 95% CI: 18.5–28.2), followed closely by wrist and hand problems at 20.9% (n = 58; 95% CI: 16.2–25.5). Less frequently reported sites included ankle/foot (14.0%), knee (12.9%), hip/thigh (12.2%), elbow (11.5%), upper back (10.4%), and neck (9.0%). A chi-square test confirmed significant variation in prevalence across anatomical regions ($p < 0.001$), with the shoulder representing the clear outlier in terms of injury burden.

Short-term prevalence mirrored these patterns. Within the past seven days, both the shoulder and lower back were reported by 6.5% of players (n = 18 each), followed by wrist/hand complaints at 5.8% (n = 16). Although acute problems in the ankle/foot (3.2%) and knee (2.5%) were less common, these regions remain clinically relevant given their role in dynamic cricket-specific movements. Statistical testing again demonstrated significant clustering of problems in the shoulder and lower back ($p < 0.001$), reinforcing their central role in the musculoskeletal profile of cricket players.

Table 1. Demographic and Training Characteristics of Cricket Players (N = 278)

Variable	Mean ± SD	95% CI (Lower–Upper)
Age (years)	21.19 ± 3.03	20.83 – 21.56
Height (cm)	174.94 ± 7.21	174.09 – 175.79
Weight (kg)	66.82 ± 8.93	65.79 – 67.86
BMI (kg/m²)	21.82 ± 2.54	21.52 – 22.13
Years of playing	4.09 ± 2.93	3.74 – 4.44
Daily training (hours)	5.08 ± 1.21	4.94 – 5.23

Table 2. Musculoskeletal Problems Reported in the Past 12 Months (N = 278)

Anatomical Region	Frequency (n)	Percentage (%)	95% CI (%)	p-value*
Shoulder	90	32.4	27.1–37.7	<0.001
Lower back	65	23.4	18.5–28.2	0.002
Wrist/Hand	58	20.9	16.2–25.5	0.011
Ankle/Foot	39	14.0	10.0–18.0	0.047
Knee	36	12.9	9.1–16.6	0.053
Hip/Thigh	34	12.2	8.5–15.9	0.061
Elbow	32	11.5	7.9–15.0	0.071
Upper back	29	10.4	7.0–13.9	0.082
Neck	25	9.0	5.7–12.3	0.095

Table 3. Musculoskeletal Problems Reported in the Past 7 Days (N = 278)

Anatomical Region	Frequency (n)	Percentage (%)	95% CI (%)	p-value*
Shoulder	18	6.5	3.5–9.5	<0.001
Lower back	18	6.5	3.5–9.5	<0.001
Wrist/Hand	16	5.8	2.9–8.6	0.002
Ankle/Foot	9	3.2	1.2–5.1	0.047
Neck	8	2.9	1.0–4.8	0.055
Upper back	8	2.9	1.0–4.8	0.055
Knee	7	2.5	0.7–4.3	0.061
Hip/Thigh	6	2.2	0.5–3.9	0.069
Elbow	3	1.1	0.0–2.3	0.083

Functional limitation was a major consequence of these injuries. Shoulder problems prevented 20.9% (n = 58) of players from participating in cricket activities over the last year, with lower back problems limiting 16.9% (n = 47) and wrist/hand problems 15.8% (n = 44). Physician consultations reflected a similar pattern, with 15.8% (n = 44) of players seeking care for shoulder problems, 13.7% (n = 38) for lower back, and 11.9% (n = 33) for wrist/hand issues. These findings demonstrate not only the high prevalence but also the functional and healthcare impact of musculoskeletal problems among cricketers, where shoulder and lower back problems emerge as both statistically significant and clinically burdensome.

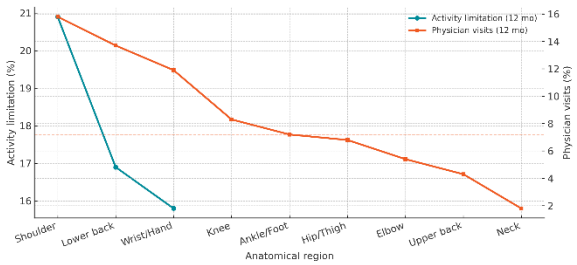

Figure 1 Clinical Burden Across Anatomical Regions: Proportions with Activity Limitation and Physician Visits

Here is the integrated dual-axis line + scatter graph showing the proportion of cricket players reporting activity limitation and physician visits due to musculoskeletal problems across anatomical regions. The visualization highlights that shoulder and lower back problems carry the greatest combined functional and clinical burden.

DISCUSSION

The present study examined the frequency and distribution of musculoskeletal problems among cricket players in Rawalpindi and Islamabad, revealing the shoulder, lower back, and wrist/hand as the most affected regions. Over one-third of the players experienced shoulder-related issues within the past year, a finding consistent with prior research from India and Bangladesh, where prevalence estimates ranged from 23% to 44% among active cricketers (19,20). The high burden in the shoulder region is likely attributable to repetitive overhead movements, particularly among bowlers and all-rounders, who place significant stress on the glenohumeral joint during delivery, throwing, and fielding maneuvers. The comparable short-term prevalence of shoulder and lower back problems further emphasizes their role as persistent sources of morbidity in this population.

The 23.4% prevalence of lower back problems in the current study is in agreement with the findings of Rao et al., who reported a similar frequency among Indian players (8). Fast bowlers, in particular, are vulnerable to lumbar injuries due to repetitive trunk rotation combined with high-impact ground reaction forces, which accelerate degenerative processes in the lumbar spine. This pattern was reinforced by our data, where lower back pain not only limited activity in 16.9% of players but also accounted for 13.7% of physician consultations. Wrist and hand problems, reported by 20.9% of participants, also align with earlier reports by Bhushan et al., who emphasized the susceptibility of batsmen to impact-related trauma and overuse symptoms from prolonged gripping (19).

Comparisons with international cohorts highlight both similarities and disparities. Rashaduzzaman et al. observed shoulder problems in 32.4% of adolescent players in Dhaka, closely mirroring the current prevalence (20). However, Kumar et al. reported higher rates (44%) among university-level cricketers in Haryana, which may be attributed to the lack of structured training and physiotherapy support in less professional settings (23). Conversely, Mondam et al. reported higher rates of upper back discomfort than those found here, a difference likely attributable to shorter weekly training durations in their cohort, suggesting that variations in load management substantially influence injury patterns (24).

While the epidemiology observed in this study parallels existing literature, it underscores a critical gap in the Pakistani context. Most prior studies have focused on Lahore or Sindh (12,13), with minimal representation of players from Rawalpindi and Islamabad despite their established cricket academies. The present findings add valuable regional evidence, supporting the need for standardized injury prevention programs. Preventive strategies should include targeted physiotherapy focusing on shoulder and lumbar stability, structured strength and conditioning regimens, and workload monitoring to reduce repetitive strain.

This study's strengths include its relatively large sample size and the use of a validated instrument (the Nordic Musculoskeletal Questionnaire) for injury assessment. Nevertheless, several limitations warrant consideration. The reliance on self-reported symptoms may introduce recall bias, and the cross-sectional design precludes causal inferences regarding training load or role-specific risk factors. Furthermore, the exclusive inclusion of male players limits generalizability to female athletes, who represent a growing cricket population in Pakistan. Severity grading, biomechanical evaluations, and longitudinal follow-up were not conducted, preventing a more comprehensive understanding of injury mechanisms.

In summary, the findings highlight that musculoskeletal problems among cricketers in Rawalpindi and Islamabad are highly prevalent, with shoulder and lower back issues posing the greatest burden in terms of both prevalence and functional limitation. These results, when considered alongside prior national and international data, emphasize the urgent need for structured injury prevention protocols and early physiotherapeutic interventions tailored to the demands of cricket in Pakistan.

CONCLUSION

This study demonstrated a high prevalence of musculoskeletal problems among cricket players in Rawalpindi and Islamabad, with the shoulder, lower back, and wrist/hand emerging as the most commonly affected regions. These problems not only impaired participation but also drove substantial physician consultations, underscoring their clinical impact. The consistency of these findings with national and international evidence highlights the universality of musculoskeletal challenges in cricket, while also providing region-specific data that had been previously lacking for these cities. The results call for the integration of preventive physiotherapy, structured conditioning, and workload management into cricket training programs to mitigate the burden of shoulder and spinal injuries in particular. By addressing these areas, stakeholders can enhance player health, prolong career longevity, and reduce healthcare demand in this athletic population.

REFERENCES

1. Pardiwala DN, Rao NN, Varshney AV. Injuries in cricket. Sports Health. 2018;10(3):217-22.
2. Cai H, Bullock GS, Sanchez-Santos MT, Peirce N, Arden NK, Filbay SR. Joint pain and osteoarthritis in former recreational and elite cricketers. BMC Musculoskelet Disord. 2019;20(1):1-10.
3. Bodanki C, Krishna YH, Badam VK, Harsha T, Reddy AG. Prevalence of cricket-related musculoskeletal pain among Indian junior club cricketers. Int J Res Orthop. 2020;6(4):744-8.
4. Jacobs J, Olivier B, Dawood M, Perera NKP. Prevalence and incidence of injuries among female cricket players: a systematic review protocol. JBI Evid Synth. 2021;19(8):1977-83.
5. Perera NKP, Kountouris A, Kemp JL, Joseph C, Finch CF. The incidence, prevalence, nature, severity and mechanisms of injury in elite female cricketers: a prospective cohort study. J Sci Med Sport. 2019;22(9):1014-20.
6. Hoque MF, Khan AR, Khan MJ. Epidemiology of sports-related musculoskeletal injuries common in men's domestic cricket: an analytical cross-sectional study based on sports fields. J Clin Physiother Res. 2021;6(1):e29.
7. Stretch R. The incidence and nature of injuries in first-league and provincial cricketers. S Afr Med J. 1993;83(5):339-42.
8. Rao MR, Srinivasan TM, Itagi RK. Epidemiology of annual musculoskeletal injuries among male cricket players in India. Indian J Community Health. 2020;32(3):590-3.
9. Sathya P, Parekh RN. Prevalence of musculoskeletal problems in cricket players. Int J Health Sci Res. 2017;7(8):210-5.

10. Prabhakar S, Raj N. The wicketkeeper and injury. J Postgrad Med Educ Res. 2013;47(2):97-100.

11. Kumar P, Singh R, Singh R, Kumar MS. Comparative analysis of physiological variables of intervarsity-level batsmen, pace bowlers, spin bowlers, wicketkeepers and all-rounders in India. Int J Behav Soc Mov Sci. 2013;2(1):104-17.

12. Ali B, Aslam M, Ahmed I, Hussain R. Prevalence of musculoskeletal conditions among cricketers in Sindh, Pakistan. Spark. 2023;8(1):81-9.

13. Aziz M, Zeeshan M. Prevalence of musculoskeletal disorders among cricketers in Lahore, Pakistan. RMJ. 2020;45(2):215-9.

14. Rahman E, Akter MF, Haque MO, Rahman MH. Common sports injuries among male cricket players in Bangladesh. J Curr Med Res Opin. 2019;2(11):331-3.

15. Ahmad S, Ullah S, Ibrahimi ZK, Zeb A. Frequency of musculoskeletal injuries and associated risk factors among volleyball players in Peshawar. Rehman J Health Sci. 2024;6(1):111-5.

16. Krishna V, Noronha T, Pathak AA. Association between core strength and dynamic balance of throwing hand in professional healthy cricket fast bowlers: a cross sectional study. J Bodyw Mov Ther. 2024;39:156-61.

17. Tasnim A, Amjad F, Zahra N, Khatoon R, Zafar A, Bashir K. Prevalence of musculoskeletal problems among tennis players in twin cities of Pakistan. J Health Rehabil Res. 2024;4(1):858-62.

18. Ejaz R, Farooq MN, Amjad F, Batool R, Khalil H, Tasnim A, et al. Prevalence of musculoskeletal pain among badminton players in twin cities of Pakistan. Therapist. 2023;1(1):14-8.

19. Bhushan H, Vishwanath S. Prevalence of musculoskeletal disorders in cricketers. Res Rev J Health Prof. 2023;13(2):20-6.

20. Rashaduzzaman M, Kamrujjaman M, Ariful Islam MA, Ahmed S, Azad SA. Analysis of point-specific musculoskeletal pain among adolescent club cricketers in Dhaka city. Eur J Clin Exp Med. 2019;17(4):349-53.

21. Zondo S, Abdullahi Y, Noorbhai H. Highlighting rural cricket: prevalence, aetiology, and risk factors of injury among community cricket players. Open Sports Sci J. 2023;16(1):1-7.

22. Dube A, Gundani MPD, Rastogi S. Musculoskeletal injuries among adolescent cricketers in Zimbabwe. MOJ Sports Med. 2018;2(1):49-52.

23. Kumar S, Kulandaivelan S, Kaur J, Chaturvedi R, Girdhar B, Singh V, et al. One-year prevalence of musculoskeletal disorders among cricket players in Haryana: a retrospective study. Strain. 2015;20(1):36-40.

24. Mondam S, Shaik R, Prakash J, Fook JL, Nekkanti S. Surveillance of musculoskeletal symptoms and anthropometric variables among four international cricket teams in the ACC Premier League Malaysia 2014. Asian J Pharm Res Health Care. 2016;8(2):47-51.