

Prevalence of Musculoskeletal Problems in Cricket Players

P. Sathya¹, Roshni Nilesh Parekh²

¹Assistant Professor, ²Physiotherapy Student
D .Y. Patil University, School of Physiotherapy, Nerul, Navi Mumbai, India.

Corresponding Author: P. Sathya

ABSTRACT

The purpose of the study was to find the prevalence of musculoskeletal problem in club level male cricket players.

Methodology: A cross sectional survey was carried out on 125 club level male cricket players using Modified Nordic Musculoskeletal Questionnaire to find the prevalence of musculoskeletal problem in cricket players.

Result: Out of 125 cricket players investigated, 76 (61%) players experienced cricket-related musculoskeletal problems within last 12 months. Lower back, ankle and knee are the 3 most common areas of problems in cricket players. The rate of musculoskeletal problems was more in all-rounder's (70%) followed by bowlers (60%) and batsman (42%). Strain and sprain were the two most common (42% and 26%) type of injury among cricket players.

Conclusion: This study concludes that there was 61% prevalence of musculoskeletal problems in cricket players. Lower back was the most commonly injured body part followed by ankles/feet, knees and hips/thighs. Musculoskeletal problems were more common in all-rounder's compared to batsmen and bowlers. Ankles/feet were the most commonly affected area in all-rounder's, low back area was commonly affected in bowlers and batsmen followed by other areas. This study also concludes that on the basis of type of injury, strain and sprain are the most common types of injuries in cricket players.

Key Words: Musculoskeletal problems, Modified Nordic Musculoskeletal Questionnaire, Cricket players.

INTRODUCTION

Cricket is the most popular sport in India and is gaining in importance in all south East Asian countries. Its expansion over the past decades has placed greater demand on cricketers due to increased playing hours and increased performance expectations. ^[1] Cricket is a dynamic sport that involves many abstract skills and movements. To enhance these skills and movements, many players ensure that their bodies are kept fit and strong. ^[2-4] There are three unique aspects of the game (bowling, batting and fielding) which are associated with risk of injury. ^[3,4] Musculoskeletal pain

can occur in various ways while playing cricket: a player being struck by a ball or bat, rapid rotational movements, sliding and diving, collisions with other players and overuse injuries. ^[5-8] Stretch et al. reported that the lower limbs (50%), upper limbs (23%), and back and trunk (23%) were most commonly injured in South African cricketers. ^[7] Milson et al. reported that in South African schoolboy cricketers 34% of injuries were sustained to the upper limbs, 34% to the lower limbs and 31% to the back and trunk. ^[8] There are studies that states that in cricket players with shoulder injury grip strength is affected ^[9] even type of

bowling in cricket affect foot posture which may eventually lead to foot and ankle injury. [10]

There are many studies available at international level on injuries faced by cricket players but only very few studies are available in India. Thus the purpose of the study was to find the prevalence of musculoskeletal problem and prevalence of type of injury based on the role of play in the club level male cricket players.

METHODOLOGY

- **Study Design:** - It is a cross-sectional survey study.
- **Study Setting:-**
 - Shivaji Park cricket ground
 - Goregaon Sports Club
 - Payyade sports club
 - D.Y. Patil Sports Academy
- **Sample size:** - 125 cricketers
- **Inclusion criteria:-**
 - Male cricket players of the age 19-26 years
 - Playing experience of minimum 3 years with regular practices
 - Club level players
- **Exclusion criteria:-**
 - Players less than 19 years of age and more than 26 years.

Players who have an experience of less than 3 years.

Players who do not practice regularly

Ethical approval: The study was approved by Institutional Ethics and Research committee of D. Y. Patil University. Written informed consent was taken from all players and their identification information which was collected during the study was kept strictly confidential.

Procedure: 125 male cricket players were selected after inclusion and exclusion criteria. The players were made aware about the purpose of the study. Each components of Modified Nordic Musculoskeletal Questionnaire was explained to each and every player. Players were asked to recall the injuries they sustained in last one year i.e January 2016 to December 2016 and, Injury information was collected as: Anatomical site of injury (Head, neck, shoulder & arm, elbow & forearm, wrist & hand, back, hip & thigh, knee & leg, ankle & foot) and category of injury (Sprain, Strain, fracture, dislocation & other injuries) and the role of the player (Batsman, Bowler and All-Rounder) the answers were noted. The information obtained from the scale was analyzed using simple percentages and graphs.

RESULT

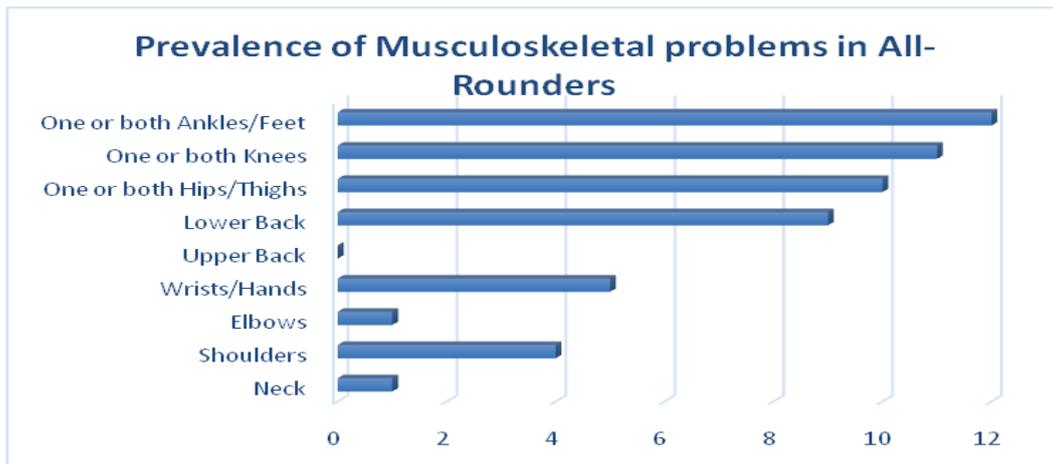
Prevalence of Musculoskeletal problems in Cr

Anatomical Site	Prevalence (%)
Lower Back	29%
Ankles/Feet	24%
Knees	22%
Hips/Thighs	21%
Shoulders	12%
Wrists/Hands	12%
Elbows	5%
Neck	1%

Graph 1: Prevalence of Musculoskeletal problem in cricket players

Inference: The above graph shows prevalence of musculoskeletal problems in cricket players. The anatomical sites of pain were Lower Back (29%), Ankles/Feet

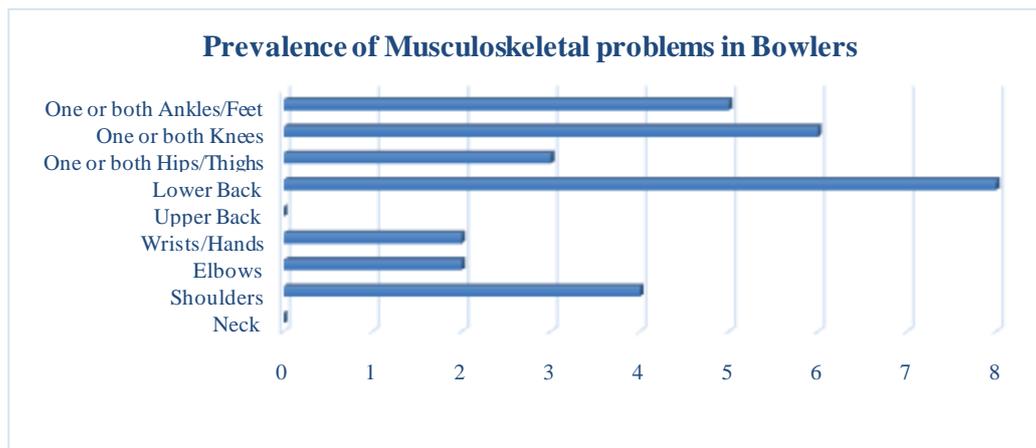
(24%), Knees (22%), Hips/Thighs (21%), Shoulders (12%), Wrists/Hand (12%), Elbow (5%), Neck (1%).



Graph 2: Prevalence of Musculoskeletal problem in all rounders

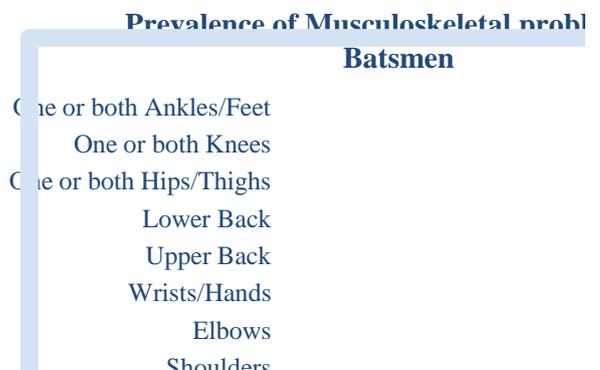
Inference: The above graph shows prevalence of musculoskeletal problems in all-rounder players. Out of 57 All Rounder players, 39 (68%) players experienced cricket-related musculoskeletal problems within the last 12 months. The anatomical

sites were: Neck 1 (3%), Shoulder 4 (10%), Elbows 1 (3%), Wrist/Hand 5 (13%), Upper back 0 (0%), Lower back 9 (23%), Hips/Thighs 10 (26%), Knees 11 (28%), Ankles/Feet 12 (31%).



Graph 3: Prevalence of Musculoskeletal problem in bowlers

Inference: The above graph shows prevalence of musculoskeletal problems in the bowlers. Out of 42 Bowlers, 25 (60%) players experienced cricket-related musculoskeletal problems within the last 12 months. Neck 0 (0%), Shoulder 4(16%), Elbows 2(8%), Wrist/Hand 2 (18%), Upper back (0%), Lower back 8 (32%), Hips/Thighs 3 (12%), Knees 6 (24%), Ankles/Feet 5 (20%).



Graph 4: Prevalence of Musculoskeletal problem in batsmen

Inference: The above graph shows prevalence of musculoskeletal problems in

the batsmen. Out of 24 Batsmen, 10 (42%) players experienced cricket-related musculoskeletal problems within the last 12 months. Neck 0 (0%), Shoulder 1 (10%), Elbows 1 (10%), Wrist/Hand 2 (20%),

Upper back 0 (0%), Lower back 4 (40%), Hips/Thighs 3 (30%), Knees 0 (0%), Ankles/Feet 1 (10%).



Graph5: Type of Injuries in cricket players

Inference: The above graph shows prevalence of injuries according to type of injuries in cricket players. Out of 125 cricket players investigated, 76 (61%) players experienced cricket-related musculoskeletal problems within the last 12 months. Out of these 76 players, 33 (42%) had Strain, 20 (26%) had Sprain, 15 (20%) had other injuries and 10 (13%) had Fracture/Dislocation.

DISCUSSION

The study was done on 125 male cricket players of age group 19-26 years. The objectives of the study were (a) Prevalence of musculoskeletal problems in cricket players (Based on site of injury - Nordic's musculoskeletal questionnaire). (b) Prevalence of musculoskeletal problems based on the role of the player in the game (cricket). (c) Prevalence of type of injury in cricket players based on the role of the player. Modified Nordic's musculoskeletal questionnaire was used to find the prevalence of musculoskeletal problems in cricket players in the last one year.

(a). Prevalence of Musculoskeletal injuries in Cricket players :

Out of 125 cricket players investigated, 76 (61%) players experienced

cricket-related musculoskeletal problems within the last 12 months. According to the graph 1 Lower back, ankle and knee are the 3 most common areas of problems in cricket players. Low back pain (29%) is the most common site of injury in cricket this could be due to repeated hyper-extension of trunk before releasing the ball while bowling, certain shots while batting. [6-10,15,17,18] Among the different role play in the game all-rounder's received maximum injuries (70%), followed by bowlers (60%), batsmen (42%).

- Prevented from doing normal work in the last 12 months because of the trouble:

The most commonly involved site in preventing the players from doing normal work in the last 12 months because of the trouble is Hips/Thighs followed by Ankles/Feet and Lower back.

- Players who had trouble at any time during the last 7 days :

The most commonly affected site causing trouble in the last 7 days is Lower back followed by Ankles/Feet and Knees.

(b)The second objective is to find Prevalence of musculoskeletal problems based on the role of the player in the game:

Out of 57 All Rounder players, 39 (68%) players experienced cricket-related musculoskeletal problems within the last 12 months. According to graph 2 Ankles/Feet, Knees, Hips/Thighs and Lower back are the 4 most common areas of problems in All-rounder's. Since they have to concentrate on Batting, Bowling as well as fielding, they are exposed to high levels of stresses in the lower extremities and trunk. Hence lower limb and trunk are most commonly affected. [4-15]

Out of 42 Bowlers, 25 (60%) players experienced cricket-related musculoskeletal problems within the last 12 months. According to graph 3 Lower Back, Knees, Ankles/Feet and Shoulder are the 4 most common areas of injuries in Bowlers. Lower back injuries are most common in bowlers because bowling involves repetitive twisting, extension and rotation of the trunk in a short period, at the same time body tissues and footwear must absorb large ground reaction forces of 4.1 to 9 times the bowler's body weight. And lower limb injuries to the knees and ankles are common due to the heavy impact and twisting forces while running before the bowling action. Shoulder injuries in Bowlers tend to result from throwing but can be aggravated by bowling, because of the repetitive forces involved. [3,10,14]

Out of 24 Batsmen, 10 (42%) players experienced cricket-related musculoskeletal problems within the last 12 months. According to graph 4 Lower back, Hips/thighs, Wrist/hand are the 3 most common areas of injuries in batsmen. Batting involves rapid acceleration, deceleration and sudden changes in direction when running between the wickets. These sudden running movements often occur in between periods of relative rest where the batsman repeatedly stands flexed over their bat. This repetitive stooped position can lead to lower back pain,

particularly if the batsman is batting for long periods of time. Hips/Thighs are injured in Batsmen due to sudden acceleration or deceleration movement whilst running at high speed (such as running between the wickets). Frequently occurs in cricket when bending forwards whilst sprinting, such as when sliding the bat to complete a quick single and trying to avoid being run out. Wrist/Hand injuries are common in Batsmen due to overuse from repeatedly gripping the bat too hard, the grip size being inappropriate, the bat being too heavy or an incorrect batting technique being employed. [19]

(c)The third objective is to find Prevalence of type of injury in cricket players based on the role of the player.

According to graphs 5 strain and sprain are the two most common (42% and 26%) type of injury among cricket players. [4,7,12,15,16] Strain was the most common type of injury in Bowlers 15 players was affected. Sprain was the most common type of injury in all-rounder's 13 players was affected followed by other injuries and fracture/dislocation.

CONCLUSION

The above study concludes that the prevalence of musculoskeletal problem in club level cricket players were more. Lower back was the most commonly injured body part followed by ankles/feet, knees and hips/thighs. According to the role play in the game the musculoskeletal problems were more in all-rounder's compared to batsmen and bowlers. The study also concludes that ankles/feet were the most commonly affected area in all-rounder's followed by knees, hips/thighs and lowers back. Lower back was the most affected area in batsmen followed by hips/thighs and wrists/hands. Lower back was the most affected area in bowlers as well followed by knees, ankles/feet and shoulders. The study also concludes that on the basis of type of injury strain and sprain are the most common types of injuries faced by the cricket players.

Conflict of Interest: NIL

REFERENCES

1. Finch CF, Elliott BC, McGrath AC. Measures to prevent cricket injuries. *Sports Medicine*. 1999 Oct 1; 28(4):263-72.
2. Mondam S, Shaik R, Prakash J, Fook JL, Nekkanti S. Surveillance of Musculoskeletal Symptoms and Anthropometric Variables among Four International Cricket Teams Competed in ACC Premier League Malaysia 2014. *Asian Journal of Pharmaceutical Research and Health Care*. 2016 Apr 20;8(2):47-51.
3. Tanzir-Uz-Zaman M. Common sports injuries among the injured cricket players.
4. Das NS, Usman J, Choudhury D, Osman NA. Nature and Pattern of Cricket Injuries: The Asian Cricket Council Under-19, Elite Cup, 2013. *PloS one*. 2014 Jun 13; 9(6):e100028.
5. Frost WL, Chalmers DJ. Injury in elite New Zealand cricketers 2002–2008: descriptive epidemiology. *Br J Sports Med*. 2012 Aug 1; bjsports-2012.
6. Noorbhai MH, Essack FM, Thwala SN, Ellapen TJ, Van Heerden JH. Prevalence of cricket-related musculoskeletal pain among adolescent cricketers in KwaZulu-Natal. *South African Journal of Sports Medicine*. 2012 Mar 1; 24(1):3-9.
7. Trella C. A 3-year investigation into the incidence and nature of cricket injuries in elite South African schoolboy cricketers. *South African Journal of Sports Medicine*. 2012; 24(1).
8. Milsom NM, Barnard JG, Stretch RA. Seasonal incidence and nature of cricket injuries among elite South African schoolboy cricketers. *South African Journal of Sports Medicine*. 2007 Sep 1; 19(3):80-4.
9. Sathya P PS. Comparison of grip strength in Cricket Players with and without Shoulder injury. *International Journal of Current Research*. 2016 Jul; 8(Issue 7):35200-4.
10. P. Sathya PP. Foot Posture of Pace Bowlers and Spinners in Cricket. *International Journal of Health Sciences and Research*. 2017 Apr;7(4):275-9.
11. Sreekaarini I, Eapen C, Zulfeequer CP. Prevalence of sports injuries in adolescent athletes. *J Athl Enhancement* 3. 2014; 5:2.
12. Stretch RA. Cricket injuries: a longitudinal study of the nature of injuries to South African cricketers. *British Journal of Sports Medicine*. 2003 Jun 1; 37(3):250-3.
13. Orchard J, James T, Alcott E, Carter S, Farhart P. Injuries in Australian cricket at first class level 1995/1996 to 2000/2001. *British Journal of Sports Medicine*. 2002 Aug 1; 36(4):270-4.
14. Leary T, White JA. Acute injury incidence in professional county club cricket players (1985–1995). *British Journal of Sports Medicine*. 2000 Apr 1; 34(2):145-7.
15. Kumar S, Kulandaivelan S, Kaur J, Chaturvedi R, Girdhar B, Singh V, Punia S, Kumar V. One year prevalence of musculoskeletal disorder among cricket Players in Haryana: A retrospective study. *Strain*. 2015;20:36.
16. Mansingh A, Harper L, Headley S, King-Mowatt J, Mansingh G. Injuries in West Indies cricket 2003–2004. *British journal of sports medicine*. 2006 Feb 1; 40(2):119-23.
17. Arora M, Paoloni JA, Kandwal P, Diwan AD. Are fast-bowlers prone to back injuries? Prevalence of lumbar spine injuries in fast-bowlers: review of MRI-based studies. *Asian journal of sports medicine*. 2014 Dec; 5(4).
18. Crisp T. Cricket: fast bowler's back and thrower's shoulder. *The Practitioner*. 1989 May;233(1469):790-2.
19. <https://www.physioadvisor.com.au/injury-diagnosis/sports-injuries/cricket-injuries/batting-injuries/> - Physio Advisor .com.

How to cite this article: Sathya P, Parekh RN. Prevalence of musculoskeletal problems in cricket players. *Int J Health Sci Res*. 2017; 7(8):210-215.
