



Original research

Match injuries in Sri Lankan junior cricket: A prospective, longitudinal study



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ABSTRACT

Objectives: Understanding the nature of injuries in cricket is key to mitigate injury risks and prioritise preventive measures. This study aimed to identify the incidence and nature of match injuries among Sri Lankan junior cricketers.

Design: Longitudinal follow-up study with prospective in-season data collection.

Methods: A national survey of schoolboy, division-1 cricket teams in under-15 and under-17 age groups. Using a paper-based questionnaire, distributed to school-teams at the start of the 2016 cricket season, respondents recorded any injuries, including the site, type and mechanism. Match injury incidence rates (match-IIR) (injuries/100 match-player-days) were calculated overall, by position and for match time loss (MTL) and non-MTL injuries.

Results: From 59 school-teams, 573 players responded, with 404 players reporting 744 injuries in 648 matches. The match-IIR was 28.0 injuries/100 match-player-days (95% CI = 26.0–30.2). The highest match-IIR was reported among fielders (46.0% of all injuries sustained; match-IIR = 12.9) compared with batters (25.4%; match-IIR = 7.1) and bowlers (20.3%; match-IIR = 5.7). Abrasions and bruises to the knee or elbow were the most common injuries among fielders, with the majority being non-MTL injuries.

Conclusions: Almost half (46.0%) of all injuries were to fielders, and more research into their severity and mechanisms is needed to identify the need for, and design of, preventive measures. Batters sustained a relatively large number of facial-organ injuries from being struck by the ball, presenting a need to evaluate the use and appropriateness of helmets by Sri Lankan junior cricketers. Similar to other junior cricket studies, the most common injuries among bowlers were strains and sprains, mainly affecting the lower limbs and lower back.

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Practical implications

- The potentially high number of injuries among Sri Lankan junior cricketers indicates the need to focus on injury prevention programmes, especially related to fielding activities.
- The use of helmets may be of benefit for batters, due to the high incidence of facial-organ and head injuries that accounted for a large proportion of MTL injuries.
- Injury prevention programmes in junior cricket need to focus on risks and injury mechanisms specific to their context and these appear to differ from elite senior cricket.

1. Introduction

Cricket is a bat-and-ball sport, widely considered as being non-contact or limited-contact in nature. However, some Australian studies have found cricket to account for a relatively large percentage of all hospital-treated sports injuries.^{1,2} Acute traumatic injuries in cricket are primarily associated with being struck by the cricket ball, especially during batting and fielding.^{3,4} On the other hand, chronic overuse injuries are frequently reported in fast-bowlers due to high intensity repetitive movements and high bowling workloads.^{5,6} Longitudinal injury surveillance studies have been conducted among elite adult cricketers in several test-cricket playing nations, including Australia,^{7,8} South Africa,⁹ England,¹⁰ and New Zealand.¹¹ These epidemiological studies have identified the nature and risks related to injuries in senior elite

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cricket,^{5,6} and have assisted in development of injury prevention measures.^{4,12}

Studies in junior cricket have highlighted some unique differences in injury rates and risk characteristics,^{13,14} as opposed to what has already been established in adult cricket.^{8,9} One Australian junior cricket study reported similar rates of injuries across all playing positions (fielding, batting, bowling).¹³ Other studies have suggested that within a junior cricket cohort, there are more acute traumatic injuries than overuse injuries,^{13,15} and that injury incidence rates rise with increasing age and level of play.¹⁵ Therefore, translating knowledge of injury risk management gathered from evidence in elite adult cricketers may not be appropriate or accurate in developing injury prevention measures for junior cricket.¹⁴

At present, only a few countries, particularly Australia^{13,15} and South Africa,^{14,16} have conducted studies describing the incidence and nature of injuries in junior cricket. Cricket is a popular sport in the South Asian region, which includes five of the twelve test-cricket playing countries. Despite the popularity of cricket, and large representation of participants, there is a relative lack of knowledge on the incidence and nature of cricket injuries from this region. Sri Lanka has been a test-cricket playing nation for over 30 years. Nevertheless, current understanding of the incidence, nature and risks of injuries among Sri Lankan cricketers is very limited and the only published report relates to cricketers representing the national squad.¹⁷

In Sri Lankan junior cricket formats, school age cricketers take part in several major competitions throughout the year. To date, there has been no published data on the incidence and nature of injuries among junior cricketers from Sri Lanka. Given the large participation at school level, it is important to keep these juniors active and free from injury. To do so, there is first a need to understand the incidence and nature of injuries in order to mitigate the injury risks and identify opportunities for prevention. Therefore, the aim of this study is to provide the first profile of the incidence and nature of injuries among Sri Lankan junior cricketers.

2. Methods

This study was designed as a longitudinal follow-up study with prospective in-season data collection, using a paper-based questionnaire on self-reported match injuries in cricket. The survey was conducted during all matches of the 2016 domestic inter-school cricket tournament across Sri Lanka from May to September, in collaboration with the governing body of school cricket (Sri Lanka School Cricket Association-SLSCA). Boys, under-15 (U-15) and under-17 (U-17) age categories, taking part in the division-1 tournament, were eligible to participate in the study. Information related to the study was provided to players and their parents with informed written consent subsequently obtained. Ethical approval was provided by the Human Research Ethics Committee of (the Federation University Australia (A16-039)).

The questionnaire was developed from two existing resources: (1) the validated cricket injury record form used in the Australian Juniors Enjoying Cricket Safely (J ECS) project,^{13,18} and (2) the consensus statement for injury surveillance in cricket for details on injury definitions and reporting methods.¹⁹ The newly developed questionnaire was reviewed and approved by all members of the research team to obtain the English version of the *J ECS-SL questionnaire*.²⁰ The J ECS-SL questionnaire consisted of two parts: (A) demographics (age, playing position), details of matches played during the tournament, (B) injuries that occurred during matches, including the body part injured, type of injury, mechanism and activity at the time of injury, treatment received and use of protective equipment.

The English version of the J ECS-SL questionnaire, consent form and plain language information statement were translated into the two main languages in Sri Lanka – Sinhala and Tamil. Standard forward-back translation was carried out by two bilingual (English-Sinhala and English-Tamil) accredited translators. The translated versions of the questionnaire were then examined by two Tamil and Sinhala language school teachers for language accuracy (grammar and spelling mistakes), clarity and age-appropriateness. The process used to translate and validate these versions of the J ECS-SL has been reported elsewhere.²⁰

At the beginning of the tournament, fifteen questionnaire packs in all three languages (Tamil, Sinhala and English, allowing participants to select their preferred language) were posted to the teacher-in-charge of cricket, who was given written and verbal instructions on distribution and collection procedures. The packs were distributed by the teacher to the first eleven members of the team, with an extra four for any reserve players. Each pack included a plain language information statement and instructions on questionnaire completion. Participants completed part A (demographics) once, and part B (match injuries) was completed following each match played. All completed questionnaires were returned by players to their teacher at the end of the season, in an envelope provided to maintain confidentiality. The teachers-in-charge were sent two to three reminders (phone call and text messages) to return all collected questionnaires to the lead investigator.

Collected surveys were coded with a unique player identifier, entered into an Excel database for initial editing, then exported to SPSS Version 24 (IBM Corp., Armonk, NY, USA) for analysis. All questionnaires were included for analysis, even if incomplete. Where applicable, variables with missing data (e.g. details of injury type sustained) are identified in the results. Injuries were classified to the two-character level of the Orchard Sports Injury Classification System 10 (OSICS-10.1).²¹ A descriptive profile of the demographic and injury data are presented (frequency, proportion and 95% confidence interval), overall and by age group (U15 and U17). Injury rates were calculated and reported based on the definitions in the consensus guidelines for injury surveillance in cricket.¹⁹ Match injury incidence rates (match-IIR) were reported as the number of injuries per 100 match-player-days with 95% confidence intervals. Each match was played over one-day and therefore, total match-player-days were calculated by accumulating the number of matches played by each player. The injury severity was reported based on the “match time loss” (MTL) and “non-match time loss” (non-MTL) injuries from the consensus statement.¹⁹ A MTL injury was defined as any injury sustained during cricket match play that resulted in a player missing either the remainder of the current match or the next match, partly or completely, due to the injury. All other injuries sustained during cricket match play that did not result in missing a part of a match were considered as non-MTL injuries. Injuries that resulted in MTL due to those sustained outside match play (e.g. during training) were not included.

3. Results

A total of 156 cricket school-teams from U-15 (n=81) and U-17 (n=75) took part in the tournament. Eleven teams (7.0%, 11/156) were excluded because they did not receive the questionnaires in the post (n=7) or the teacher-in-charge could not be contacted (n=4). Of the remaining 145 teams, 59 teams (34 in U-15; 25 in U-17) returned the questionnaires (40.7% team response rate), while 86 teams (59.3%, 86/145) did not return the questionnaires. From the 59 included teams, 573 participants consented, and completed questionnaires (347 in U-15; 226 in U-17). The response rate was therefore 26.3% of participants from all teams who received ques-

tionnaires to 64.7% of participants from all teams who returned questionnaires (assuming the maximum of 15 participants per team).

Together, respondents ($n=573$) played 2511 matches during the tournament (range 1–7; median = 4) and sustained 744 injuries (injuries per player ranged from 0 to 5; median = 1) in 648 matches (25.8%, 648/2511). Over two thirds of participants (70.5%, 404/573) sustained at least 1 injury (range 1–5 injuries per player). Of these, 168 had 1 injury only, 153 players had 2 injuries, 64 players had 3 injuries and 19 players had 4 or 5 injuries. All matches were played over one-day and therefore the total 'match-player-days' used to calculate injury rates was 2511. The total match-IIR for all respondents was 28 injuries per 100 match-player-days (95% CI = 26.0–30.2) (Table 1). For MTL injuries, the match-IIR was 6.1 per 100 match-player-days (95% CI = 5.2–7.1) and for non-MTL injuries, the match-IIR was 21.9 per 100 match-player-days (95% CI = 20.1–23.9).

Most injuries were reported among the fielders ($n=324$; 46.0%), followed by batters ($n=179$; 25.4%), bowlers ($n=143$; 20.3%) and wicket-keepers ($n=53$; 7.5%). Among fielders, non-MTL injuries accounted for 81% of all injuries. The most frequently injured body site, type and mechanism of injuries for different cricket playing tasks are presented in Table 2. Strains (30.6%) and sprains (17.4%) were the most common injury type among bowlers, whereas bruising was most common among batters (32.3%). Abrasions accounted for a larger proportion of injuries among fielders (34.0%) and wicket-keepers (21.6%). Collectively, the most common site of injury was the knee (13.1%), followed by the hand (10.3%), thigh (8%), and lower back (8%). The three main injury mechanisms were being struck by the ball (51.4% batters, 28.3% wicket-keepers, 17.9% fielders), overexertion (31.4% bowlers, 11.6% batters), and diving for a catch (36.1% fielders, 20.8% wicket-keepers).

Table 3 shows the most common injuries reported according to OSICS two-character level, with abrasions/lacerations to the knee (match-IIR = 1.67; 95% CI = 1.2–2.3) and elbow (match-IIR = 1.63; 95% CI = 1.2–2.2) being most common. Most of these knee abrasions/lacerations (92.8%) and elbow abrasions/lacerations (95.1%) were non-MTL injuries, and together 83.1% were linked to fielding activities. In terms of MTL injuries, hand and wrist bone injuries (e.g. acute fractures/stress fractures) among fielders and facial-organ injuries (eyes, nose, ears, dental) among batters accounted for 92.9% and 61.1% of MTL injuries, respectively.

4. Discussion

This is the first study to report prospectively-collected, epidemiological injury data among junior Sri Lankan cricketers, and to our knowledge, the first in the South Asian region. This is important given the large number of participants and potential injury burden in these cricket nations. Overall, fielding accounted for nearly half of all injuries sustained by junior cricketers during matches of the tournament season (46.0%), followed by batting (25.4%) and bowling (20.3%). Across all playing positions, the knee and hand were the two most commonly injured body sites, with abrasions and bruises the most common injury types. Reporting injuries based on MTL and non-MTL injuries provided interesting information on injury outcomes. For MTL injuries, bone injuries (acute fractures/stress fractures) to the hand and wrist regions were most common in fielders, with head/facial injuries in batters, and muscle/tendon strains in thigh, leg and lower back regions among bowlers. Non-MTL injuries were mainly abrasions and lacerations to the knee, elbow and forearm regions occurring commonly among fielders, and suggest less severe forms of injuries than MTL injuries.

The overall match-IIR, reported according to the recommendations in the cricket injury consensus guidelines,¹⁹ among Sri Lankan

junior cricketers was 28 injuries per 100 match-player-days. Previous studies reporting injuries among junior cricketers have used different denominators in calculating and reporting injury rates, including the original JECS study, which reported injury rate as injuries per 1000 participations for batting, bowling and fielding participations, each separately.¹³ As a result, it is not possible to directly compare injury rates among studies of different junior cricket populations. Nevertheless, a crude calculation based on match injuries per 100 respondents drawn from published studies suggests, considerably greater injury rates among Sri Lankan junior cricketers (130/100 respondents) than in Australian (7.5/100¹³; 4.3/100¹⁵) and South African (31.6/100¹⁴; 34.5/100²²; 34.2/100¹⁶) junior cricketers. However, it should be noted that only the Sri Lankan study and another from Australia with a low injury rate of 4.3/100 respondent¹⁵ have reported match injury data, whereas all other studies have reported seasonal injury rates for both matches and training. Therefore, our results cannot be directly compared with previous studies, and future investigation to identify training injuries among Sri Lankan junior cricketers would be beneficial. The use of different survey instruments, timing of data collection relative to playing seasons, different injury definitions and collection procedures all influence the detail and type of injuries identified in a study of this nature. Our results, and those of the studies described above, demonstrate the various challenges of injury surveillance and why it is important to adhere to standardised methods for data collection.

Fielding injuries accounted for almost twice as many bowling and batting injuries. This is in agreement with the findings from the Australian JECS study where the match fielding injury rate was twice the bowling injury rate among community-level junior cricketers.¹³ However, this finding is in contradiction with findings in elite adult cricket,^{7,9,23} including from the Sri Lankan national squad,¹⁷ and also provincial-level junior cricket studies from South Africa,^{14,16,24} where bowling injuries have been reported as two to three times greater than the number of batting and fielding injuries. The fielding injuries were mostly minor in nature and include abrasions and bruises affecting the knee, hand and elbow regions. Further investigations are required to assess the severity and mechanisms of these fielding injuries, to determine whether junior cricketers need specific emphasis in preventing fielding related injuries. For example, there may be a need to improve fielding skills (e.g. catching, ball handling) or to assess the playing field for safety (uneven surfaces, ground hardness) as suggested in previous studies.^{13,18}

The injury characteristics (site, type and mechanism) of Sri Lankan junior bowlers were similar to what has been reported for bowlers in other junior cricket studies, with lower back and lower limbs being injured most often,^{13,16} secondary to mechanisms such as overuse or overexertion.¹⁵ However, injury rate reported among bowlers was low, and different to other junior cricket studies where a greater number of injuries among fast-bowlers are reported than fielders or batters.^{14,16,24} In previous studies, bowling injuries are more commonly reported among fast-bowlers than spin-bowlers, and significant differences have been observed in terms of the body site injured between the two styles.^{23,25} Cricket playing countries in the Indian subcontinent region, including Sri Lanka, generally have a relative high number of spin-bowlers in their squads,¹⁷ compared with countries such as Australia, South Africa and England who are dominated by fast-bowlers. As currently available bowling injury data is mainly reported from these fast-bowling countries,^{9,23} there is a possibility that injury rates among bowlers may be different in the Indian subcontinent due to relatively greater participation of spin-bowling than fast-bowling. In addition, junior cricketers may be exposed to a reduced workload than elite-level fast bowlers, because most junior matches are played only over one-day. However, the present study did not report injury rates or collect match

Table 1
Match injury incidence rates (IIR) for different cricket playing tasks (injuries per 100 match-player-days).

Activity	Under-15 (n = 347) ^d				Under-17 (n = 226) ^d				All participants (n = 573) ^d				
	Total injuries				Total injuries				Non-MTL	MTL	Total injuries		
	n	%	IIR ^a	95% CI	n	%	IIR ^b	95% CI	n (%)	n (%)	n (%)	IIR ^c	95% CI
Batting	123	27.4%	8.3	6.9, 9.9	56	22.0	5.4	4.1, 7.1	139 (25.2%)	40 (26.1%)	179 (25.4%)	7.1	6.1, 8.3
Bowling	86	19.2%	5.8	4.6, 7.2	57	22.3	5.5	4.2, 7.2	101 (18.3%)	42 (27.5%)	143 (20.3%)	5.7	4.8, 6.7
Fielding	200	44.5%	13.5	11.7, 15.5	124	48.6	12.1	10.0, 14.4	263 (47.7%)	61 (39.9%)	324 (46.0%)	12.9	11.5, 14.4
Wicket-keeping	37	8.2%	2.5	1.8, 3.4	16	6.3	1.6	0.9, 2.5	44 (8.0%)	9 (5.9%)	53 (7.5%)	2.1	1.6, 2.8
Other activity ^e	3	0.7%	0.2	0.0, 0.6 ^f	2	0.8	0.2	0.0, 0.7 ^f	4 (0.7%)	1 (0.6%)	5 (0.7%)	0.2	0.1, 0.5
All positions	449	100%	30.3	27.5, 33.2	255	100%	24.8	21.9, 28.0	551 (100%)	153 (100%)	704 (100%)	28.0	26.0, 30.2

Non-MTL = non Match Time Loss injuries; MTL = Match Time Loss injuries.

^a IIR calculated based on 1483 'match-player-days' in the Under-15 age category.

^b IIR calculated based on 1028 'match-player-days' in the Under-17 age category.

^c IIR calculated based on 2511 'match-player-days' for all participants (=2511).

^d Note: data on activity at time of injury was missing for 31 injuries in U-15 and 9 injuries in U-17.

^e Other activity: playing activities related to the match such as warming up, stretching exercises, training in nets.

^f 95% CI values are truncated to one decimal place.

Table 2
The most frequently reported injured body site, nature and mechanism of injuries for different cricket playing tasks.

	Batting injuries (n = 179)		Bowling injuries (n = 143)		Fielding injuries (n = 324)		Wicket-keeping injuries (n = 53)					
	n	%	n	%	N	%	n	%				
Injury nature	Bruises	60	32.3	Strain	44	30.6	Abrasions	112	34	Abrasions	11	21.6
	Not sure	21	11.3	Sprain	25	17.4	Bruises	55	16.7	Bruises	9	17.6
	Strain	19	10.2	Joint injury	17	11.8	Strain	34	10.2	Strain	8	15.7
	Sprain	17	9.1	Bruise	10	6.9	Joint injury	27	8.2	Ongoing injury	7	13.7
	Abrasion	16	8.6	Not sure	10	6.9	Sprain	24	7.3	Joint injury	5	9.8
Injury site	Thigh	21	11.4	Lower back	21	14.4	Knee	56	16.8	Lower back	10	18.5
	Hand	18	9.7	Knee	17	11.6	Hand	48	14.4	Hand	9	16.7
	Knee	14	7.6	Thigh	17	11.6	Elbow	42	12.6	Knee	6	11.1
	Lower back	13	7.0	Shoulder	16	11.0	Lower leg	22	6.6	Thigh	4	7.4
	Head/scalp	11	5.9	Lower leg	16	11.0	Shoulder	19	5.7	Elbow	3	5.6
Injury mechanism	Neck	11	5.9	Ankle	15	10.3	Thigh	17	5.1	Face	3	5.6
	Struck by ball	93	51.4	Overexertion	44	31.4	Dive for catch	119	36.1	Struck by ball	15	28.3
	Overexertion	21	11.6	Other ^a	19	13.6	Struck by ball	59	17.9	Dive for catch	11	20.8
	Other ^a	16	8.8	Slip/trip	15	10.7	Mishandling ball	47	14.2	Overexertion	10	18.9
	Overuse	11	6.1	Change of direction	15	10.7	Slip/trip	24	7.3	Mishandling ball	6	11.3

Note: Injury mechanism term 'overuse' refers to ongoing chronic injuries due to overuse, and term 'overexertion' refers to acute injuries secondary to overexertion.

^a Injury mechanisms that categorised as 'other', in the response list of the injury mechanism question.

Table 3
Specific injury diagnoses with the highest incidence rate (injuries per 100 match-player-days) reported according to the first two-characters (representing body part and type of injury) from OSICS version 10.

OSICS-10 Injury code	Injury description	Injury incidence			Non-MTL		MTL			
		n	%	Activity ^a	IIR ^b	95% CI	n	%	n	%
KK	Knee abrasions/lacerations	42	5.8	Fielding (35)	1.7	1.2, 2.3	39	92.8	2	4.8
EK	Elbow abrasions/lacerations	41	5.6	Fielding (34)	1.6	1.2, 2.2	39	95.1	2	4.9
TM/TT	High muscle/tendon strain	27	3.7	Bowling (11)	1.1	0.7, 1.6	16	59.3	11	40.7
WH	Hand and wrist bruising/contusion	25	3.4	Fielding (15)	1.0	0.6, 1.5	22	88.0	3	12.0
AJ	Ankle ligament sprain	19	2.6	Fielding (8)	0.7	0.5, 1.2	11	57.9	8	42.1
WA	Hand and wrist joint injuries (dislocations, subluxations)	19	2.6	Fielding (10)	0.7	0.5, 1.2	15	78.9	4	21.1
WK	Hand and wrist abrasions/lacerations	18	2.5	Fielding (12)	0.7	0.4, 1.1	12	66.7	3	16.7
HO	Facial-organ injuries (eyes, nose, ears, dental)	18	2.5	Batting (8)	0.7	0.4, 1.1	7	38.9	11	61.1
LM/LT	Lower back muscle/tendon strain	17	2.3	Bowling (7)	0.7	0.4, 1.1	14	82.3	3	17.6
RK	Forearm abrasions/lacerations	17	2.3	Fielding (12)	0.7	0.4, 1.1	16	94.1	0	0.0
TH	Thigh bruising/contusion	17	2.3	Batting (11)	0.7	0.4, 1.1	14	82.3	2	11.8
QM/QT	Lower leg muscle/tendon strain	16	2.2	Bowling, Fielding (7)	0.6	0.4, 1.0	11	68.7	5	31.3
KH	Knee bruising/contusion	15	2.1	Fielding (8)	0.6	0.3, 1.0	12	80.0	3	20.0
WF/WS	Hand and wrist bone injury (fractures)	14	1.9	Fielding (10)	0.5	0.3, 0.9	1	7.1	13	92.9
HN	Head injury (concussion, nerve injury)	14	1.9	Batting (8)	0.5	0.3, 0.9	8	57.1	6	42.9

MTL = Match Time Loss injuries; Non-MTL = non Match Time Loss injuries.

^a Most commonly reported cricket playing activity for the particular injury (number in brackets is n injuries sustained for the listed activity).

^b IIR calculated based on the 'match-player-days' for all participants (=2511).

exposures for spin-bowlers and fast-bowlers separately, which limits assessment of this outcome. Therefore, future studies should aim to report injuries for spin-bowlers and fast-bowlers separately, in

order to understand any differences in injury rates between the styles.

Among batters in our study, bruises accounted for the majority of injuries affecting the thigh and hand, most of which were

sustained by being struck by the cricket ball. This finding replicates the injury characteristics of Australian junior batters.^{13,15} In addition, facial-organ injuries and head injuries were also reported among Sri Lankan junior batters, contributing to a large proportion of MTL injuries (61.1% and 42.9% respectively). It is now standard practice to wear batting gloves, thigh pads and helmets during cricket batting to prevent injuries to hands, thigh, head and facial regions. However, our findings raised concerns whether U-15 and U-17 cricketers in Sri Lanka are actually wearing helmets and other protective gear during competitions, as helmet use is not compulsory at present. In an Australian study in junior cricket, injuries in batters declined significantly from 62% to just 4% after making headgear compulsory, providing some strong support towards the protective benefits of helmet use in cricket batting.¹⁵ Therefore, it could be an important measure for coaches, teachers-in-charge, and officials who supervise Sri Lankan junior cricketers to ensure they wear helmets during batting at all times.

The consensus guidelines for injury surveillance in cricket,¹⁹ has been recommended to record and report cricket injuries and identify 'significant' injuries (e.g. time loss, hospital admission, medical attention).¹⁹ Two-character level OSICS-10 diagnosis coding has been applied to epidemiological data,²⁶ and has been widely used in elite-level adult cricket.^{8,23} However, there has been less use of it in junior cricket,^{14,27} because of limitations in its potential utility for junior club cricket.¹³ In this study we reported injury data in accordance with the 2016 consensus guidelines and used the two-character OSICS-10 coding. This study provides potential directions towards developing future injury surveillance questions, particular for the South Asian region.

One of the limitations of this study was the self-reporting of injuries with no possibility of validation. For the injured body site (OSICS first-character) respondents circled the injured body part on a figure of a human body as well as identifying the location from a list of 23 specific body regions; the marked figure and written description were cross-checked on data entry. Due to potential differences in the level of perception and understanding of injury pathology by the junior cricketers, we provided simplified terms for different injury types (e.g. strain: muscle or tendon stretch or damage; sprain: ligament of a joint stretch or damage). The 2016 consensus statement for injury surveillance in cricket recommended reporting match injuries either as injuries per number of player hours, or number of player days, or both.¹⁹ For this study, in keeping with the recommendations, match injuries were reported per number of player days. Ideally, we would like to have included both measures to provide different results for comparison to other studies and sports. However, the collection of data at this level was not possible in our sample of young players. Another limitation of this study was the relatively low response rate from school-teams (40.7%, 59/145) and participants (26.3%, 573/2175), compared to a higher participant response rate from other junior cricket studies from Australia¹³ (76%) and South Africa^{14,16} (57% and 94% respectively). However, distributing the questionnaires to all U-15 and U-17 division-1 cricketers throughout the country maximised ability to obtain a nationally representative sample, and collecting data prospectively during the tournament was another strength.

5. Conclusion

This is the first study to report injuries in junior cricketers from the South Asian region, where cricket is one of the most popular participation sports. This study identified a high match injury incidence rate among Sri Lankan junior cricketers of 28 injuries per 100 match-player-days, and potential areas for injury prevention initiatives. Fielding injuries comprised almost half (46.0%) of all reported injuries, while bowling accounted for one in five (20.3%) injuries.

The high proportion of fielding-related injuries requires specific investigation into their severity and mechanisms, with consideration of both the ground surface and skill acquisition as potential areas to explore. For batters, the use and appropriateness of helmets needs to be considered with possible legislative changes for compulsory helmet use owing to a seemingly high number of facial-organ injuries, from being struck by the ball. Further evaluation of injury characteristics by bowling subtypes is also recommended to understand potential differences between injuries in the spin-bowling styles preferred in the South Asian region, compared to fast-bowlers in other regions.

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