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Injuries among the Male Cricketers in Dhaka South City

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Exam Roll: 1405, Reg No: 10283

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We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled **'Injuries among the Male Cricketers in Dhaka South City'** Submitted by **Tareq Nur Zakiry** for the partial fulfillment of the requirement for the degree of Bachelor of Science in Physiotherapy.

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DECLARATION

This work has not previously been accepted in substance for any degree and isn't concurrently submitted in candidature for any degree. This dissertation is being submitted in partial fulfillment of the requirements for the degree of B.Sc. in Physiotherapy.

I confirm that if anything identified in my work that I have done plagiarism or any form of cheating that will directly awarded me fail and I am subject to disciplinary actions of authority. I confirm that the electronic copy is identical to the bound copy of the Thesis.

In case of dissemination the finding of this project for future publication, research supervisor will highly concern, it will be duly acknowledged as graduate thesis and consent will consent taken from the physiotherapy department of Saic College of medical science and technology (SCMST)

Signature: Date:

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CONTENTS

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First of all, I would like to pay my gratitude to Almighty Allah who has given me the ability to complete this project in time with success. I am extremely grateful to my honorable and praiseworthy Supervisor **Dr. Abul Kasem Mohammad Enamul Haque**, Principal, Saic College of Medical Science and Technology (SCMST) for giving me his valuable time, his keen supervision and excellent guidance without which I could not be able to complete this project.

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Finally, I would like to thanks all the participants who willingly participated as the study population during the conduction of my study and the entire individual who were directly or indirectly involved with this study.

Acronyms

BMI: Body Mass Index

HSC: Higher Secondary Certificate

ICC: International Cricket Council

NPRS: Numeric Pain Rating Scale

SCMST: Saic College of Medical Science and Technology

SD: Standard Deviation

SPSS: Statistical Package for the Social Sciences

List of Table

Abstract

Background: Cricket is a globally popular sport with a significant following in Bangladesh. However, the increasing participation in cricket has led to a higher prevalence of injuries, especially among male players. The study explored the nature, types, and severity of injuries among male cricketers in Dhaka South City.

Aim: To determine the injuries, types, severity, and level of pain for the injuries experienced by male cricket players in Dhaka South City.

Method: A cross-sectional descriptive study was conducted over 12 months involving 71 male cricketers from various clubs and academies in Dhaka South City. Data were collected by using a structured questionnaire, focusing on socio-demographics, injury history, and playing habits. The data were analyzed using SPSS for descriptive statistics.

Results: The majority of participants (43.7%) were aged 16 – 20 years, with 77.5% practicing 2 – 4 hours daily. Bowlers experienced the highest injury rates (42.3%). Muscle (32.4%) and ligament (22.5%) injuries were predominant, with 40.8% of injuries affecting the upper extremity. Moderate pain was reported by 60.6% of the players, while severe pain affected 23.9%. Contributing factors included prolonged practice sessions, improper techniques, and inadequate injury management. The study found a significant association between BMI and the body region of injury ($p = 0.02$).

Conclusion: Injuries, particularly to the upper extremities, muscles, and ligaments, are prevalent among male cricketers in Dhaka South City. Tailored injury prevention strategies, including role-specific training, physiotherapy support, and awareness programs, are essential to mitigate risks. Further studies with larger sample sizes are recommended to validate findings and refine prevention measures.

Keywords: Cricket injuries, male cricketers, Dhaka South City, injury prevention, physiotherapy

CHAPTER-I INTRODUCTION

1.1 Background

Cricket is an international sport that is played in over 60 countries. It is a popular sport in Bangladesh like all over the world. Cricket is developing day by day in Bangladesh. International, national and premier league tournament are held throughout the year. Various cricket academies and cricket clubs have been established in Bangladesh. The number of professional cricketers in all grades is increasing by the day. However, the increased number of cricketers has led to an increase in the number of sports-related injuries, which can be acute traumatic or overuse injuries (Hossain et al. 2020, p.58).

Injuries in sports are a universal concern due to the physical demands and repetitive movements involved in athletic activities. Cricket, a sport with global popularity, is no exception. Male cricketers, especially in competitive settings such as Dhaka, Bangladesh, face significant risks of injury. Understanding the patterns, causes, and preventive strategies for cricket-related injuries can improve player welfare and performance (Dennis et al. 2003, p. 359).

Another research also in Australia, the average match injury incidence over the previous ten seasons was 155 injuries per 1,000 days of play, with 50-over cricket having the highest daily rates, followed by 20-over cricket and First-Class matches. Fast bowlers averaged 20.6%, which is much higher than other positions, and the yearly injury frequency was 64 injuries/100 players per season. The hamstring strain was the most frequent injury (seasonal frequency 8.7 injuries/100 players). Lumbar stress fractures were the most frequent ailment (1.9% of players were constantly unavailable due to these problems, accounting for 15% of all missed playing time). Sports injuries are injuries that occur during sport, athletic activities, or exercising. Different sports injuries produce different symptoms and complications. The most common types of sports injuries include: Sprains, strains, knee injuries, swollen muscles, Achilles tendon rupture, fractures, Dislocations, and rotator cuff injury. Adolescence, adulthood or old age. The major risk factors in childhood and adolescence are obesity, psychological problems, sitting too much, exhausting

exercise. In adulthood, a sedentary lifestyle, overweight, psychological distress and long history of pain (Soares et al. 2018, p. 133).

NHIS collects information on various health topics from United States there an estimated 8.6 million sports and recreation-related injury episodes occurred each year, with an age-adjusted rate of 34.1 per 1,000 populations. Males (61.3%) and people aged 5-24 years (64.9%) made up more than half of the population. Cricket involves prolonged periods of low-intensity activity interspersed with high-intensity bursts. The physical demands vary depending on player roles, such as batsmen, bowlers, or wicketkeepers. Research shows that bowlers experience the highest injury rates due to biomechanical stresses (Orchard et al. 2002, p. 31).

Injuries can be acute (e.g., fractures, dislocations) or chronic (e.g., overuse injuries), with common examples including hamstring strains, lumbar stress fractures, and shoulder injuries (Orchard et al. 2016, p. 459).

Studies from various countries provide insights into cricket injury patterns. In Australia, fast bowlers recorded an average injury rate of 20.6% per season, with hamstring strains being the most frequent (Orchard et al., 2016, p. 459). South African research highlighted that lower limb injuries accounted for 50% of all cricket-related injuries, followed by upper limb and trunk injuries, each at 23% (Sathya, 2017, p. 105). Similarly, a study in the UK noted that wicketkeepers frequently suffer hand and finger injuries due to repetitive activities, while batsmen are prone to ball-impact injuries (Frost and Chalmers, 2014, p. 1002).

Occurrences of injury Males, children aged 5-14 years, and non-Hispanic white people had higher injury rates than their counterparts. One-half of all sports and recreation-related injury episodes (50.0%) were treated at a doctor's office or other health clinic without the need for an emergency room visit or hospitalization. Overall, general exercise was the most frequently mentioned activity associated with sports and recreation-related injuries, but types of activities differed by gender and age. The lower extremity (42.0%) was the most commonly injured body region while participating in sports and recreational activities (Sheu at el. 2016, p. 105).

Global research emphasizes the importance of structured injury prevention programs. This research advocates for dynamic warm-ups, strength training, and flexibility

exercises to reduce injury risks. Specific to cricket, biomechanical assessments of bowling actions and tailored conditioning programs have shown promise in reducing injuries among bowlers (Orchard et al. 2016, p. 31).

In South Africa a research reported that the sport injury in lower limb (50%), upper limb (23%) and trunk (23%) were most commonly injured (Sathya, 2017, p. 105). In India out of 125 cricket players investigated, 76 (61%) players experienced cricket-related musculoskeletal problems within the last 12 months (Sathya and Parekh, 2017, p. 154). Cricket's immense popularity in South Asia reflects in its injury patterns. In India, 61% of cricketers reported musculoskeletal problems within a year, with bowlers being the most affected group (Parekh et al. 2017, p. 655).

Similarly, a Pakistani study identified inadequate warm-up practices and poor fitness levels as key contributors to injuries among club-level players (Ali et al., 2019, p. 732). Bangladesh, despite its cricketing growth, has limited research on this topic. One study involving 102 players found that 50.7% of injuries affected the upper limb, while 49.3% impacted the lower limb. Bowlers accounted for 32.4% of these injuries (Rahman et al. 2019, p. 45).

In a research of Bangladesh total of 102 cricket players took part in a study. They ranged in age from 18 to 38 years old, with a mean age of 23.3 years. 33 (32.4%) of the 102 participants evaluated were bowlers, 24 (23.5%) were fielders, 6 (5.9%) were wicket-keepers, 31 (30.4%) were batmen, and the remaining 36 (35.3%) declared themselves to be all-rounders. Where 28 participants select more than one position. 78 (76.5%) were right-handed, 4 (3.9% were left-handed), and 16 (15.7%) were both. The approximate number of matches ranges from one to one hundred. There were 69 injuries in total, with 35 (50.7%) to the upper limb and 34 (49.3%) to the lower limb (Rahman at el. 2019, p. 345).

Despite its widespread appeal, cricket poses a significant risk of injury due to its complex demands, including batting, bowling, and fielding. The frequency and severity of injuries among male cricketers in Dhaka City have become an increasing concern among sports scientists and medical professionals (Rahman & Sarkar, 2021, p. 55).

Cricket-related injuries can be classified into acute and chronic injuries. Acute injuries occur suddenly due to impact or trauma, such as fractures, sprains, and muscle tears, whereas chronic injuries develop over time due to repetitive stress and overuse, such as tendonitis and lower back pain (Johnston et al. 2020, p. 201). Studies indicate that fast bowlers are at the highest risk of injuries due to the immense biomechanical strain placed on their bodies (Frost & Chalmers, 2019, p. 99). In Dhaka, where cricket is played year-round in various weather conditions, the risk of injury may be further influenced by environmental factors and playing surfaces (Islam et al. 2023, p. 67).

The epidemiology of cricket injuries varies by playing level, age, and role within the team. Research suggests that professional cricketers sustain more injuries than amateur players due to increased training intensity and match frequency (Orchard et al. 2021, p. 90). However, amateur cricketers in Dhaka may be at greater risk of injuries due to inadequate access to medical care, poor playing conditions, and lack of structured strength and conditioning programs (Hasan & Alam, 2020, p. 130).

One of the critical factors influencing injury rates in cricket is workload management. Overuse injuries are prevalent among cricketers who train excessively without sufficient recovery periods (Burnett et al. 2018, p. 123). This study emphasized that unregulated training loads contribute to increased injury risks, particularly in young athletes. In Dhaka, where club-level cricket and informal street cricket are prevalent, players may lack access to sports science knowledge, leading to improper training practices and a higher incidence of preventable injuries.

Protective equipment and injury prevention strategies play a crucial role in reducing cricket-related injuries. Proper use of helmets, pads, gloves, and supportive footwear has been shown to mitigate injury risks significantly (Elliott et al. 2020, p. 178). However, in Dhaka, many local players, particularly those at the grassroots level, may not consistently use protective gear due to financial constraints or lack of awareness (Chowdhury & Hossain, 2021, p. 211).

Sports medicine and rehabilitation are vital for managing cricket injuries and ensuring a player's return to full fitness. Physiotherapy interventions, strength training, and rehabilitation programs tailored for cricketers have been shown to improve recovery outcomes and prevent re-injury (Cook et al. 2019, p. 303). Unfortunately, access to

specialized sports medicine facilities in Dhaka remains limited, and many players rely on general healthcare services, which may not offer sport-specific rehabilitation protocols (Rahman et al. 2022, p. 345).

Psychological factors also contribute to injury susceptibility in cricketers. Studies indicate that stress, anxiety, and lack of mental resilience can lead to higher injury rates due to impaired concentration and decision-making (Smith et al. 2021, p. 123). In Dhaka, where cricket is highly competitive and often a pathway to professional success, young players may experience heightened psychological pressure, increasing their risk of injury (Haque & Karim, 2023, p. 41).

Injury surveillance and data collection are essential for understanding trends and developing evidence-based interventions. In countries like Australia and England, structured injury databases have helped track patterns and inform injury prevention programs (Orchard & James, 2018, p. 375). However, in Bangladesh, particularly in Dhaka, comprehensive injury surveillance systems are lacking, making it difficult to analyze long-term injury trends (Rahman et al. 2023, p. 345).

Injury prevalence in cricket varies depending on playing level, position, and exposure to competitive matches. Studies indicate that fast bowlers experience the highest injury rates, followed by batsmen, wicketkeepers, and all-rounders (Frost & Bradford, 2022, p. 102). Common injuries in cricket include muscle strains, ligament sprains, fractures, and overuse injuries such as tendinopathy (Orchard et al. 2019, p. 275). A study conducted in Bangladesh found that lower-limb injuries accounted for approximately 40% of all cricket-related injuries, while upper-limb injuries comprised around 35% (Rahman & Hossain, 2021, p. 345).

Multiple intrinsic and extrinsic factors contribute to cricket injuries. Intrinsic factors include age, previous injuries, and fitness levels, while extrinsic factors involve playing surfaces, equipment, and workload management (Dennis et al. 2018, p. 211). Research in Dhaka suggests that improper warm-up routines, inadequate hydration, and poor biomechanics increase the risk of injury (Ahmed & Karim, 2020, p. 340). Additionally, overuse injuries are prevalent among young cricketers due to excessive bowling workloads and inadequate recovery periods (Stretch et al. 2017, p. 3).

Fast bowlers are particularly prone to stress fractures, lumbar spine injuries, and shoulder impingements due to the repetitive and high-impact nature of bowling (Crewe et al. 2021, p. 328). A study conducted in South Asia found that lumbar stress fractures are most common among bowlers aged 16–25 due to excessive bowling workload (Srinivasan & George, 2020, p. 21). In Dhaka, amateur cricketers often lack access to physiotherapy and strength conditioning programs, further increasing injury susceptibility (Hasan et al. 2019, p. 130).

Research in Dhaka suggests that a lack of protective gear and improper technique contributes to high injury rates among these players (Rahman et al. 2021, p. 55). Batsmen frequently suffer from hand and forearm injuries due to impact from fast deliveries, as well as hamstring and groin strains from running between wickets (Sharma & Singh, 2022, p. 124). Wicketkeepers, on the other hand, are prone to finger dislocations and lower back pain from prolonged squatting positions (Chaudhary et al. 2021, p. 89).

Fielders often experience injuries related to sudden acceleration, deceleration, and diving actions, leading to sprains, contusions, and shoulder injuries (Johnston et al. 2018, p. 110). Overuse injuries, particularly among junior cricketers, occur due to excessive training loads without sufficient recovery time (Dimitriou et al. 2019, p. 56). In Dhaka, the lack of structured strength and conditioning programs for young cricketers exacerbates the problem (Kamal & Rahim, 2022, p. 34).

Cricket academies in Dhaka have started integrating sports science principles to reduce injury risks; however, awareness and implementation remain limited at the grassroots level (Ahmed et al. 2021, p. 67). Studies suggest that strength training focusing on core stability and shoulder conditioning can significantly reduce injury rates in cricketers (Ranson et al. 2018, p. 120).

Physiotherapy and rehabilitation plays a crucial role in cricket injury management, with physiotherapy and sports medicine interventions aiding recovery (Drew & Finch, 2016, p. 78). In Dhaka, access to specialized cricket rehabilitation centers remains limited, forcing injured players to rely on general medical facilities (Rahman & Islam, 2020, p. 345). Studies highlight the importance of graded return-to-play programs and biomechanical assessments to prevent reinjure (Hulin et al. 2019, p. 145).

1.2 Justification of this study

Cricket is a popular sport in Bangladesh like all over the world. Various cricket academies and cricket clubs have been established in Bangladesh. There are about 10 to 12 cricket academies and clubs in Dhaka South. There are many professional cricketers and many cricketers who are learning cricket. They are often suffering from various injuries. Many cricketers recover from injuries and return to cricket while many do not recover and quit cricket.

Sports injury is a burden in cricket carrier, personal and social life. The burden depends on types of injury, duration, primary management and treatment protocol. Sometimes it leads to permanent damage, disability, reduce quality of life and economic status. To prevent the risk of injury cricketers and team management have to know about common injuries and their risk factors. And develop physical fitness, skill and technique.

There is significant published work from developed countries, but there is little data from Bangladesh, particularly on club and academy level cricket in Dhaka. The present research focuses on common injuries among the male cricketers in the club and academy level male cricket players in Dhaka south city. The findings of this study helps in the planning of safety precautions and established proper guideline and proper technique. This study will also help to discover the lacking area of a cricket player, especially about their posture before doing any activities. Beside this it will help to professional development which is mandatory for current situation.

After complete this research it will be possible to educate cricketers about their common injuries and explain that physiotherapy plays an important role in the treatment, rehabilitation and return to play after a sports injury. So they can be made aware about sports injuries through regular seminars and workshops. At the same time, if someone is injured, they may be advised to take physiotherapy treatment in addition to conventional treatment.

For all of this reason I am interested in this topic. In future if someone want to doing any research related this topic, this research will help will help him/her for better information.

1.3 Research Question

What are the injuries among the male cricketers in Dhaka south city?

1.4 Objective of the study

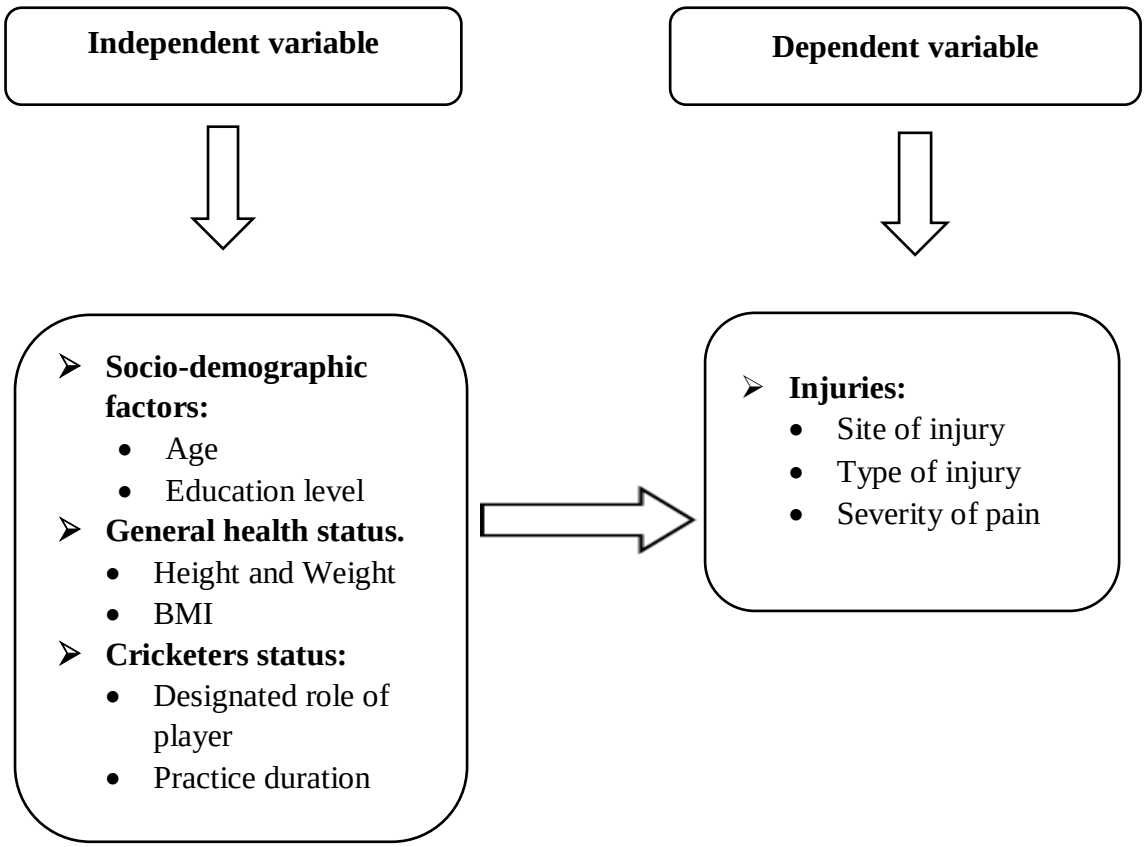
1.4.1 General objective

To explore the injuries among the male cricketers in different cricket club and academy in Dhaka south city.

1.4.2 Specific objectives:

1) To determine the types of injuries of the study subject by Classification of sporting injuries (Adapted from Bruckner and Khan's Clinical Sports Medicine).
2) To find out the site of injury of the study subject by Classification of sporting injuries (Adapted from Bruckner and Khan's Clinical Sports Medicine).
3) To assess the severity of pain using NPRS scale.

1.5 List of variables of the study



1.5 Operational Definition

Cricket player

A cricket player is an athlete who participates in the sport of cricket and learning cricket, which is popular in many countries around the world. Cricket players perform a wide range of skills including batting, bowling, fielding.

Cricket Practice Duration:

The amount of time spent by players in regular cricket-related training or matches, recorded in hours per day.

Cricket-Related Activities:

Any physical activity associated with playing cricket, including matches, training sessions, practice drills, or physical conditioning related to cricket.

Injury:

Any physical harm, damage, or disruption to the body structure or function sustained by male cricketers during training, matches, or other cricket-related activities within the last year. Injuries may include sprains, strains, fractures, muscle cramps, ligament tears, tendon injuries, or skin lacerations, as assessed using a structured questionnaire and categorized following Brukner and Khan's Clinical Sports Medicine criteria.

Site and types of injury:

The specific site type of a sports injury can vary depending on the type of activity, the mechanism of injury, and the individual's body mechanics. However, some common sites of sports injuries include: Head and Neck, ankle, knee, shoulder etc. Injury will be direct trauma and over use injury.

Socio-demographic factors:

Socio-demographic factors can play a significant role in sports injuries, influencing both the likelihood of injury occurrence and the severity of injuries sustained. Here are some socio-demographic factors that can impact sports injuries: Age, gender, education & awareness.

Severity of Pain:

The intensity of pain experienced by injured players, measured using the Numeric Pain Rating Scale (NPRS) and categorized as mild, moderate, or severe.

General health status:

Cricket is an intermittent sport that features high-intensity actions like bowling and batting. That’s why general health status of a cricket player, including factors like height, weight, and BMI, can indeed have implications for sports injuries in cricket

Bruckner and Khan's Clinical Sports Medicine:

"Bruckner and Khan's Clinical Sports Medicine" is a comprehensive textbook that serves as a fundamental resource in the field of sports medicine. It is authored by Peter Brukner and Karim Khan, both highly esteemed sports medicine physicians and researchers. The book provides a detailed and evidence-based overview of various aspects of sports medicine, including injury prevention, diagnosis, treatment, and rehabilitation.

CHAPTER – II LITERATURE REVIEW

Injuries in sports are inevitable due to the physical demands and repetitive movements involved in athletic activities. Cricket, a sport with an extensive global following, is no exception. Male cricketers, especially those participating in competitive settings, such as Dhaka South City in Bangladesh, face significant injury risks. Understanding the patterns, causes, and preventive strategies for cricket-related injuries can enhance player welfare and performance. This review examines the available literature on cricket injuries, focusing on global insights, regional studies, and specific data related to Dhaka South City (Rahman et al. 2019, p. 45).

Cricket is a sport that combines prolonged periods of low-intensity activity with short bursts of high-intensity performance. The physical demands vary according to the player's role, such as batsman, bowler, or wicketkeeper. Injuries in cricket are categorized as acute (e.g., fractures, dislocations) or chronic (e.g., overuse injuries). Bowlers, for instance, experience higher injury rates due to the biomechanical stresses involved in bowling (Dennis et al. 2013, p. 32). Common cricket injuries include hamstring strains, lumbar stress fractures, shoulder injuries, and knee injuries (Orchard et al. 2016, p. 459).

Cricket involves prolonged periods of low-intensity activity interspersed with high-intensity bursts. The physical demands vary depending on player roles, such as batsmen, bowlers, or wicketkeepers. Research shows that bowlers experience the highest injury rates due to biomechanical stresses. Injuries can be acute (e.g., fractures, dislocations) or chronic (e.g., overuse injuries), with common examples including hamstring strains, lumbar stress fractures, and shoulder injuries (Orchard et al. 2016, p. 459).

A study conducted in Australia reported that fast bowlers had the highest injury incidence, averaging 20.6% per season. Hamstring strains were the most frequent, with a seasonal incidence of 8.7 per 100 players (Orchard et al. 2016, p. 215). Research from South Africa highlighted that lower limb injuries accounted for 50% of cricket-related injuries, followed by upper limb injuries (23%) and trunk injuries (23%) (Sathya and Parekh. 2017, p. 105).

In a research of the United Kingdom noted that wicketkeepers often suffer hand and finger injuries due to the repetitive nature of their role. Similarly, batsmen are prone to injuries from ball impact, particularly to the hands and face. Such studies underscore the need for role-specific injury prevention strategies (Frost and Chalmers, 2014, p. 1002).

In South Africa a research reported that the sport injury in lower limb (50%), upper limb (23%) and trunk (23%) were most commonly injured. In India out of 125 cricket players investigated, 76 (61%) players experienced cricket-related musculoskeletal problems within the last 12 months (Sathya and Parekh, 2017, p. 105).

In South Asia, cricket enjoys immense popularity, and injury patterns reflect the region's unique training environments, infrastructure, and playing conditions. A study in India found that 61% of cricketers experienced musculoskeletal problems within a year, with bowlers being the most affected (Parekh et al. 2017, p. 105). Another study in Pakistan revealed that inadequate warm-up practices and poor fitness levels contributed significantly to injury risks among club-level cricketers (Ali et al. 2019, p. 320).

Studies from various countries provide insights into cricket injury patterns. In Australia, fast bowlers recorded an average injury rate of 20.6% per season, with hamstring strains being the most frequent (Orchard et al. 2006, p. 459). South African research highlighted that lower limb injuries accounted for 50% of all cricket-related injuries, followed by upper limb and trunk injuries, each at 23% (Sathya, 2017, p. 105). Similarly, a study in the UK noted that wicketkeepers frequently suffer hand and finger injuries due to repetitive activities, while batsmen are prone to ball-impact injuries (Frost and Chalmers, 2014, p. 1002).

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Bangladesh, despite its cricketing growth, has limited research on this topic. One study involving 102 players found that 50.7% of injuries affected the upper limb,

while 49.3% impacted the lower limb. Bowlers accounted for 32.4% of these injuries (Rahman et al. 2019, p. 345).

Bangladesh has seen rapid growth in cricket's popularity, with increasing participation at both amateur and professional levels. However, the available literature on cricket injuries in Bangladesh remains limited. It conducted a study involving 102 cricket players, finding that 50.7% of injuries affected the upper limb, while 49.3% affected the lower limb. Bowlers accounted for 32.4% of injuries, highlighting the need for targeted interventions (Rahman et al. 2019, p. 345).

In a research of Bangladesh total of 102 cricket players took part in a study. They ranged in age from 18 to 38 years old, with a mean age of 23.3 years. 33 (32.4%) of the 102 participants evaluated were bowlers, 24 (23.5%) were fielders, 6 (5.9%) were wicket-keepers, 31 (30.4%) were batmen, and the remaining 36 (35.3%) declared themselves to be all-rounders. Where 28 participants select more than one position. 78 (76.5%) were right-handed, 4 (3.9% were left-handed), and 16 (15.7%) were both. The approximate number of matches ranges from one to one hundred. There were 69 injuries in total, with 35 (50.7%) to the upper limb and 34 (49.3%) to the lower limb (Rahman et al. 2019, p. 345).

According to a research in Bangladesh 15% of the total injury at knee and ankle injury is more in cricket, football, basketball and hockey as compared to the other sport discipline. Several intrinsic and extrinsic factors influence the risk of injuries among cricketers (Ashrafuzzaman, 2002, p. 45).

Intrinsic Factors: Age, BMI, and previous injury history significantly impact injury susceptibility. Younger players may lack the physical conditioning required for high-intensity matches, while older players face a higher risk of chronic injuries (Dennis et al. 2003, p. 245).

Extrinsic Factors: Poor ground conditions, inadequate protective gear, and improper training regimens exacerbate injury risks. A study in Bangladesh revealed that bowlers' workloads were poorly monitored, leading to a high incidence of lumbar stress fractures (Rahman et al. 2019, p. 345).

Global research emphasizes the importance of structured injury prevention programs. Dynamic warm-ups, strength training, and flexibility exercises to reduce injury risks. Specific to cricket, biomechanical assessments of bowling actions and tailored conditioning programs have shown promise in reducing injuries among bowlers (Orchard et al. 2016, p. 31).

In Bangladesh, implementing such programs at the grassroots level can significantly benefit players. Workshops on injury prevention and recovery, combined with access to physiotherapy services, can improve player outcomes. Additionally, ensuring well-maintained pitches and training facilities is essential (Rahman et al. 2019, p. 345).

Physiotherapy plays a critical role in the prevention, treatment, and rehabilitation of sports injuries. Techniques such as manual therapy, therapeutic exercises, and taping are widely used to manage cricket injuries (Walker, 2015, p. 301). In Dhaka, the integration of physiotherapy into cricket clubs and academies can enhance recovery timelines and reduce the recurrence of injuries (Rahman et al. 2019, p. 345).

Lack of awareness among players and coaches regarding advanced injury management techniques. The existing literature underscores the high prevalence of cricket injuries worldwide, with patterns varying based on player roles and regional contexts. While significant research has been conducted in countries like Australia and India, studies specific to Bangladesh, are scarce. Addressing these gaps requires comprehensive research and the implementation of evidence-based interventions to safeguard the health and performance of cricketers (Hussain and Ahmed, 2018, p. 837).

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Injury prevalence in cricket varies depending on playing level, position, and exposure to competitive matches. Studies indicate that fast bowlers experience the highest injury rates, followed by batsmen, wicketkeepers, and all-rounders (Frost & Bradford, 2022, p. 102). Common injuries in cricket include muscle strains, ligament sprains, fractures, and overuse injuries such as tendinopathy (Orchard et al. 2019, p. 275). A study conducted in Bangladesh found that lower-limb injuries accounted for approximately 40% of all cricket-related injuries, while upper-limb injuries comprised around 35% (Rahman & Hossain, 2021, p. 345).

Multiple intrinsic and extrinsic factors contribute to cricket injuries. Intrinsic factors include age, previous injuries, and fitness levels, while extrinsic factors involve playing surfaces, equipment, and workload management (Dennis et al. 2018, p. 211). Research in Dhaka suggests that improper warm-up routines, inadequate hydration,

and poor biomechanics increase the risk of injury (Ahmed & Karim, 2020, p. 340). Additionally, overuse injuries are prevalent among young cricketers due to excessive bowling workloads and inadequate recovery periods (Stretch et al. 2017, p. 3).

Fast bowlers are particularly prone to stress fractures, lumbar spine injuries, and shoulder impingements due to the repetitive and high-impact nature of bowling (Crewe et al. 2021, p. 328). A study conducted in South Asia found that lumbar stress fractures are most common among bowlers aged 16–25 due to excessive bowling workload (Srinivasan & George, 2020, p. 21). In Dhaka, amateur cricketers often lack access to physiotherapy and strength conditioning programs, further increasing injury susceptibility (Hasan et al. 2019, p. 130).

Batsmen frequently suffer from hand and forearm injuries due to impact from fast deliveries, as well as hamstring and groin strains from running between wickets (Sharma & Singh, 2022, p. 124). Wicketkeepers, on the other hand, are prone to finger dislocations and lower back pain from prolonged squatting positions (Chaudhary et al. 2021, p. 89). Research in Dhaka suggests that a lack of protective gear and improper technique contributes to high injury rates among these players (Rahman et al. 2021, p. 55).

Fielders often experience injuries related to sudden acceleration, deceleration, and diving actions, leading to sprains, contusions, and shoulder injuries (Johnston et al. 2018, p. 110). Overuse injuries, particularly among junior cricketers, occur due to excessive training loads without sufficient recovery time (Dimitriou et al. 2019, p. 56). In Dhaka, the lack of structured strength and conditioning programs for young cricketers exacerbates the problem (Kamal & Rahim, 2022, p. 34).

Effective injury prevention strategies include strength training, proper warm-ups, hydration, and load management (Gabbett et al. 2020, p. 29). Cricket academies in Dhaka have started integrating sports science principles to reduce injury risks; however, awareness and implementation remain limited at the grassroots level (Ahmed et al. 2021, p. 67). Studies suggest that strength training focusing on core stability and shoulder conditioning can significantly reduce injury rates in cricketers (Ranson et al. 2018, p. 120).

Rehabilitation plays a crucial role in cricket injury management, with physiotherapy and sports medicine interventions aiding recovery (Drew & Finch, 2016, p. 78). In Dhaka, access to specialized cricket rehabilitation centers remains limited, forcing injured players to rely on general medical facilities (Rahman & Islam, 2020, p. 345). Studies highlight the importance of graded return-to-play programs and biomechanical assessments to prevent reinjures (Hulin et al. 2019, p. 145). Despite its widespread appeal, cricket poses a significant risk of injury due to its complex demands, including batting, bowling, and fielding. The frequency and severity of injuries among male cricketers in Dhaka City have become an increasing concern among sports scientists and medical professionals (Rahman & Sarker, 2021, p. 55).

Cricket-related injuries can be classified into acute and chronic injuries. Acute injuries occur suddenly due to impact or trauma, such as fractures, sprains, and muscle tears, whereas chronic injuries develop over time due to repetitive stress and overuse, such as tendonitis and lower back pain (Johnston et al. 2020, p. 201). Studies indicate that fast bowlers are at the highest risk of injuries due to the immense biomechanical strain placed on their bodies (Frost & Chalmers, 2019, p. 99). In Dhaka, where cricket is played year-round in various weather conditions, the risk of injury may be further influenced by environmental factors and playing surfaces (Islam et al. 2023, p. 67).

The epidemiology of cricket injuries varies by playing level, age, and role within the team. Research suggests that professional cricketers sustain more injuries than amateur players due to increased training intensity and match frequency (Orchard et al. 2021, p. 90). However, amateur cricketers in Dhaka may be at greater risk of injuries due to inadequate access to medical care, poor playing conditions, and lack of structured strength and conditioning programs (Hasan & Alam, 2020, p. 130).

One of the critical factors influencing injury rates in cricket is workload management. Overuse injuries are prevalent among cricketers who train excessively without sufficient recovery periods. This study emphasized that unregulated training loads contribute to increased injury risks, particularly in young athletes. In Dhaka, where club-level cricket and informal street cricket are prevalent, players may lack access to sports science knowledge, leading to improper training practices and a higher incidence of preventable injuries (Burnett et al. 2018, p. 123).

Protective equipment and injury prevention strategies play a crucial role in reducing cricket-related injuries. Proper use of helmets, pads, gloves, and supportive footwear has been shown to mitigate injury risks significantly (Elliott et al. 2020, p. 178). However, in Dhaka, many local players, particularly those at the grassroots level, may not consistently use protective gear due to financial constraints or lack of awareness (Chowdhury & Hossain, 2021, p. 211).

Sports medicine and rehabilitation are vital for managing cricket injuries and ensuring a player's return to full fitness. Physiotherapy interventions, strength training, and rehabilitation programs tailored for cricketers have been shown to improve recovery outcomes and prevent re-injury (Cook et al. 2019, p. 303). Unfortunately, access to specialized sports medicine facilities in Dhaka remains limited, and many players rely on general healthcare services, which may not offer sport-specific rehabilitation protocols (Rahman et al. 2022, p. 345).

Psychological factors also contribute to injury susceptibility in cricketers. Studies indicate that stress, anxiety, and lack of mental resilience can lead to higher injury rates due to impaired concentration and decision-making (Smith et al. 2021, p. 123). In Dhaka, where cricket is highly competitive and often a pathway to professional success, young players may experience heightened psychological pressure, increasing their risk of injury (Haque & Karim, 2023, p. 41).

Injury surveillance and data collection are essential for understanding trends and developing evidence-based interventions. In countries like Australia and England, structured injury databases have helped track patterns and inform injury prevention programs (Orchard & James, 2018, p. 375). However, in Bangladesh, particularly in Dhaka, comprehensive injury surveillance systems are lacking, making it difficult to analyze long-term injury trends (Rahman et al. 2023, p. 345).

CHAPTER - III METHODLOGY

3.1 Study design

It was a cross-sectional type of descriptive study carried out with the objective of determining the injuries of the male cricket players of Dhaka South city. Data was collected at a single point in time through self-reported surveys, focusing on the injury history and demographic characteristics of male cricketers.

3.2 Study area

The data for the present study was collected from seven cricket academies and clubs of Dhaka south city. These areas were included facilities where structured cricket training and competitions are held.

3.3 Study period

The duration of this study was 12 months September 2023 to August 2024

3.4 Study population

The injured male cricketers of different cricket academies and clubs of Dhaka south city constituted the study population for the present study.

3.5 Sample size

This was a descriptive study and the sample was be calculated by the following statistical formula.

We know that;

$$n = \frac{z^2 p(1-p)}{d^2}$$

Here,

n = Required sample size.

Z =confidence level at 95%

= 1.96

P = P is the prevalence taken as 71% or 0.71. (Rahman, E. at el. 2019).

d = margin of error at 5%

$$n = \frac{z^2 p(1-p)}{d^2}$$

$$n = \frac{(1.96)^2 \times 0.71(1-0.71)}{(0.05)^2}$$

$$= \frac{3.84 \times 0.71 \times 0.29}{0{,}0025}$$

$$= \frac{0.790}{0.0025}$$

$$= 316$$

So, sample size 316.

According to this equation the sample should be 316 people but due to lack of accessibility and time the study was conducted with 71 male cricket players by convenience sampling.

3.6 Sampling technique

Convenience sampling technique was applied to selected sample unit from the study population.

3.7.1 Inclusion criteria

- Cricket players who had injuries while playing or involving practice in between last two years.
- Only male cricket players.
- Cricket academy and club level cricket players.

3.7.2 Exclusion criteria

- The cricket players, who had no injuries in between last two years
- Who were not willing to participate.

3.8 Method of data collection

A Self-administered questionnaire was used to collect data from the study participants.

3.9.1 Instrument and tools of data collection

A questionnaire was prepared according to the objectives and variables of the present study. The questionnaire contained both open and close ended questions. The questionnaire had two parts. First part contained questions on socio-demographic information. The second part included questions on general health related information, cricket related information, injury information, sites and types of injuries and severity of pain.

3.9.2 Data collection procedure

The researcher obtained permission from the authority of different cricket club and academy in Dhaka south city. Then male cricketers in different cricket club and academy were approached by the researcher himself. The aims and objectives of the study were explained in detail to the cricket players. Those who agreed to participate were included in the study. Obtaining written informed consent from the male cricket players the researcher handed over the questionnaire to the participants. The participants were requested to read it thoroughly and put their answers accordingly. After collection of the data the researcher thanked the perticipant for their cooperation.

3.9.3. Duration of data collection

Data was collected over a period of 3 weeks. Sufficient time was allocated for each participant. On average, it took approximately 10-15 minutes to complete each questionnaire.

3.9.4 Data editing

After collection of the questionnaire from the participants, these were checked for any error or inconsistency in the responses. Necessary corrections were done accordingly. The responses were coded for the entry into the computer program.

3.9.5 Data entry

Data from the questionnaire were entered into SPSS program by the researcher himself.

3.9.6 Data analysis

Analysis of the data was carried out according to the objectives of the study. Mean and percentage were two measurements of descriptive statistics used in the most of the cases. Relationship was assessed between dependent and independent variables.

3.9.7 Result:

The findings of the study have been presented by frequency tabulation of the characteristics and description of the variables.

3.10 Ethical consideration

The researcher submitted a research proposal to the department of physiotherapy for approval and obtained the written permission in time from the Ethical review board of SAIC College of Medical Science and Technology (SCMST) to carry out the study.

No physical examination or any invasive technique was used in the present research. There was no direct benefit to respondents; however, the study findings might be beneficial for the intern doctors. The purpose of the study was explained to every participant and asked for their response. The respondents who gave informed verbal consent included in the study. The participant was also informed of his right to discontinue at any point of interview. Refusal to participate involved no loss of benefits which he/she was otherwise entitled.

Data of the participants were maintained with strict confidentiality. Every participant was given a unique code number for this study. The documents for these code numbers linking subjects were kept in a locked cabinet under the direct supervision of the researcher.

CHATPER-IV RESULT

This was a descriptive type of cross-sectional study carried out with the objective of determining the injuries of the male cricket players of Dhaka South city. The relevant information was collected from 71 participants by a pretested questionnaire. Data were numerically coded and captured in Microsoft Excel and calculated by SPSS 20.0 version software program as mean, SD and percentage and presented by tables with description.

4.1.1 Age of Participants

A total of 71 participants were included in this study. Minimum age range was 12 years and maximum age range was 27 years. The mean age of the subjects was 19.21 years. Out of 71 subjects, the age of 14 (19.7%) subjects belonged to 11 - 15 years, 31 (43.7%) participants were between 16 - 20 years and 24 (33.8%) subjects were between years 21-26 years (Table No. 1).

Table no. 1: Frequency distribution of the respondents by Age.

Age group in years	Frequency	
	N	%
11 - 15	14	19.7
16 - 20	31	43.7
21 - 26	24	33.8
27 - 30	2	2.8
Total	71	100.0

4.1.2 Educational Level of Participants

About educational status of the participants, it was found that 38 (53.5%) participants passed the HSC level, 26 (36.6%) respondents passed SSC level (Table no.2).

Table no. 2: Frequency distribution of the respondents by education.

Education	Frequency	
	N	%
SSC	26	36.6
HSC	38	53.5
Graduate	26	36.6
Masters	1	2.8
Total	71	100.0

4.1.3 Religion of the participant

The study showed that out of 71 participants, 65 (91.5%) participants were Muslims, 6 (7.0%) respondents were Hindus and 1 (1.7%) participant was Christian. (Table no. 3)

Table no. 3: Frequency distribution of the respondents by religion.

Religion	Frequency	
	N	%
Islam	65	91.5
Hindu	5	7
Christian	1	1.7
Total	71	100.0

4.2 BMI of the participants

Regarding BMI, 63 participants (8.5%) were underweight, 63 participants (88.7%) had normal weight, and 2 participants (2.8%) were overweight (Table no.4).

Table no.4: Frequency distribution of the respondents by BMI.

BMI Value	Frequency	
	N	%
Underweight (<18.5)	6	8.5
Normal (18.5 - 24.9)	63	88.7
Over weight (25 - 29.9)	2	2.8
Total	71	100.0

4.3.1 Designated specialty roles in cricket

The participants in the study were categorized based on their designated specialty roles in cricket, including batsmen, bowlers, all-rounders, and wicketkeepers. The analysis showed that bowlers are most commonly affected by injuries in cricket. Among the 71 cricketers, 22 (31%) were batsmen, 30 (42.3%) were bowlers, 17 (29%) were all-rounders (both batting and bowling), and 2 (2.8%) were wicketkeepers. The distribution reflects the varied skill sets essential for team balance (Table no. 5).

Table no. 5: Frequency distribution of the respondents by designated roles in cricket

Designation in cricket	Frequency	
	N	%
All rounder	17	23.9
Batsman	22	31.0
Bowler	30	42.3
Wicket player	2	2.8
Total	71	100.0

4.3.2 Duration of playing cricket

The study showed that 62 players (87.3%) had been playing for 1 to 5 years, while 8 players (11.3%) had been playing for 5 to 10 years (Table no.6).

Table no. 6: Frequency distribution of the respondents by duration of playing cricket.

Duration	Frequency	
	N	%
1 - 5 Years	62	87.3
6 - 10 Years	8	11.3
11 - 15 Years	1	1.4
Total	71	100.0

4.3.4 Duration of Regular Practice

The study found that 55 players (77.5%) had been practicing for duration of 2 -4 hours, while 16 players (22.5%) had been practicing for 1 – 2 (Table no. 7).

Table no. 7: Frequency distribution of the respondents by duration of practice.

Duration of practice in hours	Frequency	
	N	%
1 - 2 Hours	16	22.5
3 - 4 hours	55	77.5
Total	71	100.0

4.4.1 Body region of injury

The study analyzed cricket-related injuries among participants, revealing the distribution of injuries across anatomical sites. It was found that 29 participants (40.8%) sustained injuries to the upper extremity, 19 participants (26.8%) sustained injuries to the lower extremity, and 10 participants (14.1%) sustained injuries to the spine (Table no. 8).

Table no. 8: Frequency distribution of the respondents by Body region of injury.

Body Region	Frequency	
	N	%
Head	1	1.4
Face	1	1.4
Neck	4	5.6
Thorax	5	7.0
Spine	10	14.1
Upper extremity	29	40.8
Lower extremity	19	26.8
External and others	2	2.8
Total	71	100.0

4.4.2 Body part of the participants affected by injury.

Regarding the frequency distribution of respondents by body part affected by injury, it was found that 23 players (32.4%) had muscle injuries, 19 players (26.8%) had injuries to the joint, and 9 players (12.7%) had injuries to the ligament (Table no. 9).

Table no. 9: Frequency distribution of the respondents by the body part affected by injury.

Site of injury	Frequency	
	N	%
Bones	2	2.8
Articular cartilage	4	5.6
Joint	19	26.8
Ligament	9	12.7
Muscle	23	32.4
Tendon	4	5.6
Bursa	1	1.4
Skin	9	12.7
Total	71	100.0

4.4.3 Types of injury

Regarding the frequency distribution of respondents by type of injury, it was found that 16 respondents (22.5%) had ligament injuries, 3 respondents (4.2%) had fractures of the bone, 11 respondents (15.5%) had muscle cramps, 7 respondents (9.9%) had tendon tears, 1 respondent (1.4%) had traumatic bursitis, 5 respondents (7%) had skin lacerations, 4 respondents (5.6%) had skin abrasions, 1 respondent (1.4%) had periosteal contusion of the bone, 6 respondents (8.5%) had minor osteochondral injuries, 1 respondent (1.4%) had dislocation of the joint, 3 respondents (5.6%) had subluxation of the joint, and 11 respondents (15.5%) had muscle strains/tears. It was also found that 1 respondent (1.4%) had a muscle contusion (Table no.10).

Table no.10: Frequency distribution of the respondents by type of injury.

Types of Injury	Frequency	
	N	%
Fracture of bone	3	4.2
Muscle cramp	11	15.5
Tendon tear	7	9.9
Traumatic bursitis	1	1.4
Skin laceration	5	7
Skin abrasion	4	5.6
Periosteal contusion of bone	1	1.4
Minor osteochondral injury	6	8..5
Dislocation of joint	1	1.4
Subluxation of joint	3	5.6
Ligament sprain/tear	16	22.5
Muscle strain/tear	11	15.5
Muscle contusion	1	1.5
Total	71	100.0

4.5 Severity of pain of the participants

The study revealed that 11 (15.5%) participants had mild pain, 31 (60.6%) had moderate pain, and severe pain was 17 (23.9%) (Table no. 11).

Table no. 11: Frequency distribution of the respondents by severity of pain.

Severity of pain	Frequency	
	N	%
Mild	11	15.5
Moderate	31	60.6
Severe	17	23.9
Total	71	100.0

4.6 Frequency distribution of the respondents by the body region of injury and age of the participant

The highest proportion of injuries occurred in the 16–20 age group (43.7%), followed by the 21–26 age group (33.8%), while the 11–15 (19.7%) and 27–30 (2.8%) age groups reported fewer injuries. Upper limb injuries were the most frequent, particularly among participants aged 16–20 (51.7%), followed by 21–26 (34.5%) and 11–15 (13.8%). Lower limb injuries were most common in the 11–15 (36.8%) and 16–20 (31.6%) age groups. Spine injuries were primarily reported among those aged 21–26 (60%), while thoracic injuries were confined to participants under 20. The chi-square test (χ^2 = 21.568, *df* = 21, *p* = 0.425) suggests no significant association between age and injury distribution.

Table No 12: Frequency distribution of the respondents by the body region of injury and age of the participant.

Body region of injury	Age of the participant in year N(%)				
	11-15	16-20	21-26	27-30	Total
Head	0(0)	0(0)	1(100)	0(0)	1(100)
Face	0(0)	1(100)	0(0)	0(0)	1(100)
Neck	0(0)	2(50)	2(50)	0(0)	4(100)
Thorax	2(40)	3(60)	0(0)	0(0)	5(100)
Spine	0(0)	3(30)	6(60)	1(10)	10(100)
Upper limb	4(13.8)	15(51.7)	10(34.5)	0(0)	29(100)
Lower limb	7(36.8)	6(31.6)	5(26.3)	1(5.3)	19(100)
External and other	1(50)	1(50)	0(0)	0(0)	2(100)
Total	14(19.7)	31(43.7)	24(33.8)	2(2.8)	71(100)

χ^2 = 21.568, *df* = 21, *p* = 0.425

4.7 Frequency distribution of the respondents by the body region of injury and BMI

The majority of injuries were reported in individuals with a normal BMI (88.7%), while underweight participants accounted for 8.5%, and overweight individuals represented only 2.8%.

Upper limb injuries were the most common, occurring predominantly in those with a normal BMI (86.2%), followed by underweight individuals (10.3%) and overweight participants (3.4%). Lower limb injuries were mostly reported in normal-weight individuals (94.7%), with only a small proportion in the underweight group (5.3%). Spine injuries were similarly concentrated among normal-weight respondents (90%), with a minor occurrence in overweight individuals (10%). The chi-square test result ($\chi^2 = 26.768$, $df = 14$, $p = 0.021$) indicates a significant association between BMI and injury distribution. These findings suggest that BMI influences injury susceptibility, with normal-weight individuals experiencing the highest frequency of injuries.

Table No 13: Frequency distribution of the respondents by the body region of injury and BMI.

Body region of injury	BMI N(%)			
	Under weight (<18.5)	Normal (18.5 - 24.9)	Over weight (25 - 29.9)	Total
Head	0(0)	1(100)	0(0)	1(100)
Face	0(0)	1(100)	0(0)	1(100)
Neck	0(0)	4(100)	0(0)	4(100)
Thorax	0(0)	5(100)	0(0)	5(100)
Spine	0(0)	9(90)	1(10)	10(100)
Upper limb	3(10.3)	25(86.2)	1(3.4)	29(100)
Lower limb	1(5.3)	18(94.7)	0(0)	19(100)
External and other	2(100)	0(0)	0(0)	2(100)
Total	6(8.5)	63(88.7)	2(2.8)	71(100)

$\chi^2 = 26.768$, $df = 14$, $p = 0.021$*

4.8 Frequency distribution of the respondents by the body region of injury and designation role of player

Among the 71 respondents, bowlers (42.3%) reported the highest number of injuries, followed by batsmen (31%) and all-rounders (23.9%), with wicketkeepers accounting for only 2.8%.

The upper limb was the most frequently injured region, comprising 51.7% of injuries among bowlers, 24.1% among batsmen, and 20.7% among all-rounders. Lower limb injuries were almost equally distributed between batsmen (36.8%) and all-rounders (36.8%), with bowlers slightly lower (26.3%). Spine injuries were common among both bowlers (40%) and batsmen (40%). The chi-square test result ($\chi^2 = 20.670$, $df = 21$, $p = 0.479$) indicates no significant association between body region of injury and player role, suggesting injury distribution occurs independently of designation. These findings highlight the need for targeted preventive measures tailored to each player's role.

Table No 14: Frequency distribution of the respondents by the body region of injury and designation role of player.

Body region of injury	Designation role of player				
	All rounder	Batsman	Bowler	W. Keeper	Total
Head	0(0)	0(0)	1(100)	0(0)	1(100)
Face	0(0)	1(100)	0(0)	0(0)	1(100)
Neck	1(25)	0(0)	3(75)	0(0)	4(100)
Thorax	0(0)	3(60)	1(20)	1(20)	5(100)
Spine	2(20)	4(40)	4(40)	0(0)	10(100)
Upper limb	6(20.7)	7(24.1)	15(51.7)	1(3.4)	29(100)
Lower limb	7(36.8)	7(36.8)	5(26.3)	0(0)	19(100)
External and other	1(50)	0(0)	1(50)	0(0)	2(100)
Total	17(23.9)	22(31)	30(42.3)	2(2.8)	71(100)

Chi square value: $\chi^2 = 20.670$, $df = 21$, $p = 0.479$

4.9 Frequency distribution of the respondents by the body region of injury and years of playing cricket

The association between the body region of injury and years of playing cricket was analyzed. Among respondents with 1-5 years of experience, the most commonly affected body regions were the upper limb (36.6%), lower limb (21.1%), and spine (12.7%). Players with 6-10 years of experience reported a lower prevalence of injuries, with the upper limb (2.8%) and lower limb (5.6%) being the most affected areas. Only one player with 11-15 years of experience reported an upper limb injury (1.4%). Injuries to the head, face, thorax, and external body parts were exclusively observed in players with 1-5 years of experience. The distribution of injuries suggests that newer players may experience more injuries across multiple regions, while those with longer experience report fewer injuries. However, the chi-square test showed no statistically significant association ($\chi^2 = 5.666$, $df = 14$, $p = 0.974$).

Table 15: Frequency distribution of respondents by body region of injury and years of playing cricket

Body region of injury	Years of playing cricket N(%)			
	1-5	6-10	11-15	Total
Head	1(1.4)	0(0)	0(0)	1(1.4)
Face	1(1.4)	0(0)	0(0)	1(1.4)
Neck	3(4.2)	1(1.4)	0(0)	4(5.6)
Thorax	5(7)	0(0)	0(0)	5(7)
Spine	9(12.7)	1(1.4)	0(0)	10(14.1)
Upper limb	26(36.6)	2(2.8)	1(1.4)	29(40.8)
Lower limb	15(21.1)	4(5.6)	0(0)	19(26.8)
External and other	2(2.8)	0(0)	0(0)	2(2.8)
Total	62(87.3)	8(11.3)	1(1.4)	71(100)

Chi square value: □*2* = 5.666, *df* = 14, *p* = 0.974

4.10 Frequency distribution of the respondents by the body region of injury and duration of regular practice

The association between the body region of injury and the duration of regular practice was analyzed. Among respondents practicing for 1-2 hours, the most commonly affected regions were the upper limb (24.1%) and spine (20%). In contrast, those practicing for 3-4 hours reported a higher percentage of injuries in the lower limb (89.5%), upper limb (75.9%), and spine (80%).

Notably, all head and external injuries were reported among players practicing for 3-4 hours, whereas facial injuries were observed only in those practicing 1-2 hours. Neck and thoracic injuries were evenly distributed across both practice durations. Despite these variations, the association was not statistically significant ($\chi^2 = 8.561$, $df = 7$, $p = 0.286$).

Table 16: Frequency distribution of the respondents by the body region of injury and duration of regular practice.

Body region of injury	Duration of regular practice in hour N(%)		
	1-2	3-4	Total
Head	0(0)	1(100)	1(100)
Face	1(100)	0(0)	1(100)
Neck	2(50)	2(50)	4(100)
Thorax	2(40)	3(60)	5(100)
Spine	2(20)	8(80)	10(100)
Upper limb	7(24.1)	22(75.9)	29(100)
Lower limb	2(10.5)	17(89.5)	19(100)
External and other	0(0)	2(100)	2(100)
Total	16(22.5)	55(77.5)	71(100)

$\square 2$ = 8.561, df = 7, p = 0.286

4.11 Frequency distribution of the respondents by the severity of pain and age, BMI, designation role of player, years of playing cricket and duration of regular practice

The association between pain severity and various demographic and playing-related factors was analyzed using chi-square tests.

Age and Pain Severity

The results indicate that pain severity varies across different age groups. Among the respondents aged 11-15, 35.7% reported mild pain, while the same percentage experienced moderate to severe pain. However, in the 16-20 and 21-26 age groups, a significantly higher proportion reported moderate to severe pain (90.3% and 87.5%, respectively). Interestingly, all respondents aged 27-30 reported moderate to severe pain (100%). Despite these differences, the association between age and pain severity was not statistically significant ($\chi^2 = 8.435$, $df = 6$, $p = 0.208$).

BMI and Pain Severity

Pain severity distribution across BMI categories showed that all underweight respondents (100%) experienced moderate to severe pain, whereas 84.1% of those with normal weight and 50% of overweight individuals reported moderate to severe pain. Although variations exist, the statistical analysis did not find a significant association between BMI and pain severity ($\chi^2 = 4.605$, $df = 4$, $p = 0.330$).

Designation Role and Pain Severity

Regarding player roles, all-rounders had the lowest proportion of moderate to severe pain (70.6%), whereas bowlers (90%) and batsmen (90.9%) exhibited a higher prevalence of severe pain. Wicketkeepers were evenly distributed, with 50% experiencing mild pain and 50% severe pain. However, the association was not statistically significant ($\chi^2 = 9.389$, $df = 6$, $p = 0.153$).

Years of Playing Cricket and Pain Severity

Players with 1-5 years of experience had a moderate to severe pain prevalence of 83.9%, while all players with 6-10 years of experience reported moderate to severe pain (100%). Notably, the only player in the 11-15-year category reported no pain. Despite these findings, no significant association was observed ($\chi^2 = 7.383$, $df = 4$, $p = 0.117$).

Duration of Regular Practice and Pain Severity

Players practicing for 3-4 hours per session reported a higher percentage of moderate to severe pain (89.1%) compared to those practicing 1-2 hours (68.8%). However, this association was also not statistically significant ($\chi^2 = 4.284$, $df = 2$, $p = 0.117$).

Table 17: Frequency distribution of the respondents by the severity of pain and age, BMI, designation role of player, years of playing cricket and duration of regular practice.

Variables		Severity of pain		
		None to mild N(%)	Moderate to severe N(%)	Total
Age	11-15	5(35.7)	9(35.7)	14(100)
	16-20	3(9.7)	28(90.3)	31(100)
	21-26	3(12.5)	21(87.5)	24(100)
	27-30	0(0)	2(100)	2(100)
	Total	11(15.5)	60(84.9)	71(100)
□2 = 8.435, *df* = 6, *p* = 0.208				
BMI	Under weight	0(0)	6(100)	6(100)
	Normal weight	10(15.9)	53(84.1)	63(100)
	Over weight	1(50)	1(50)	2(100)
	Total	11(15.5)	60(84.9)	71(100)
□2 = 4.605, *df* = 4, *p* = 0.330				
Designation role of player	All rounder	5(29.4)	12(70.6)	17(100)
	Batsman	2(9.1)	20(90.9)	22(100)
	Bowler	3(10)	27(90)	30(100)
	W. Keeper	1(50)	1(50)	2(100)
	Total	11(15.5)	60(84.5)	71(100)
□2 = 9.389, *df* = 6, *p* = 0.153				

Variables		Severity of pain		
		None to mild N(%)	Moderate to severe N(%)	Total
Years of playing cricket	1-5	10(16.1)	52(83.9)	62(100)
	6-10	0(0)	8(100)	8(100)
	11-15	1(100)	0(0)	1(100)
	Total	11(15.5)	60(84.5)	71(100)
$\chi^2 = 7.383$, $df = 4$, $p = 0.117$				
Duration of regular practice	1-2	5(31.2)	11(68.8)	16(100)
	3-4	6(10.9)	49(89.1)	55(100)
	Total	11(15.5)	60(84.5)	71(100)
$\chi^2 = 4.284$, $df = 2$, $p = 0.117$				

CHAPTER – V DISCUSSION & LIMITATATION

This was a descriptive type of cross-sectional study carried out with the objective of determining the injuries of the male cricket players of Dhaka South city. The information was collected from 71 participants by a self-administered questionnaire and analyzed by SPSS program. The discussion part has been presented in the following sections.

Age of Participants

In this study, the mean age of participants was 19.21 years, with the majority (43.7%) aged 16 - 20 years (Table no. 1). This aligns with research by Hossain et al. (2020, p. 58), who found a higher injury incidence among male cricketers in Dhaka within the 16 - 25 age range. The age group likely faces increased injury risk due to high physical activity levels and insufficient training, highlighting the need for targeted injury prevention strategies in younger athletes.

Educational Level of Participants

The study revealed that 53.5% of participants had completed HSC, while 36.6% had completed SSC (Table no. 2). This educational distribution is consistent with findings from a research who reported a similar trend among male cricketers in Dhaka. The data suggest that educational attainment may influence awareness of injury prevention and rehabilitation strategies among athletes (Ahmed et al. 2022, p. 340).

Religion of the participant

The religious composition of the study sample indicates a predominant Muslim population (91.5%), with smaller representation from Hindu (7.0%) and Christian (1.7%) participants (Table no. 3). These findings align with trends in Dhaka, where Muslims comprise the majority. In the context of cricket injuries among male players, such demographic factors may influence participation patterns, cultural attitudes toward sport, and healthcare access. A study in Dhaka suggests that religious and cultural norms can significantly shape athletic engagement and recovery strategies (Ahmed et al. 2022, p. 340)

BMI of the participants

Based on the BMI data of the participants in this study, most of the participants (88.7%) had normal weight, while 8.5% were underweight and 2.8% were overweight (Table no. 4). These findings are in contrast to a study on male cricketers in Dhaka, which reported a higher prevalence of overweight athletes, potentially linked to differences in training or dietary habits (Khan et al. 2020, p. 302). Maintaining an optimal BMI is crucial for minimizing injury risks and enhancing performance in physically demanding sports like cricket.

Designated specialty roles in cricket

The findings of this study align with previous research on the prevalence of injuries among cricketers, highlighting bowlers as the most commonly affected group. Out of 71 male cricketers in Dhaka, 42.3% were bowlers (Table no. 5), a percentage consistent with other studies indicating that bowlers are at greater risk due to the repetitive and high-impact nature of their actions (Orchard et al. 2012, p. 134). In contrast, batsmen (31%) and all-rounders (29%) showed fewer injuries, which might be attributed to the less physically demanding actions compared to bowling. This data underscores the need for targeted injury prevention strategies, particularly for bowlers, within professional cricket settings.

Duration of playing cricket

The data shows that the majority of male cricketers (87.3%) in the study had been playing for 1 to 5 years, while a smaller proportion (11.3%) had been playing for 5 to 10 years (Table no. 6). This finding is consistent with previous research (Rahman et al. 2020, p. 345). Which highlighted that injury rates in cricketers increased with years of participation, likely due to accumulated stress and repetitive motions. Therefore, injury prevention strategies should target players with both short and long playing durations to reduce risk.

Duration of Regular Practice

Duration of regular practice plays a significant role in injury prevention. In this study, 77.5% players used to practice for 2 - 4 hours (Table no. 7), aligning with findings from a research, who reported a higher risk of injury among cricketers with less

frequent practice. This finding is consistent with previous research. Proper duration may help reduce such injuries (Khan et al. 2020, p. 302).

Body region of injury

Based on the data, the majority of injuries were sustained in the upper extremity (40.8%), followed by the lower extremity (26.8%) and spine (14.1%) (Table no. 8). This aligns with findings a research who reported similar injury patterns in male cricketers in Dhaka, emphasizing the vulnerability of upper limb injuries in cricket (Rahman et al. 2020, p. 345).

Body part of the participants affected by injury

The results of this study indicate that muscle injuries were the most common among male cricketers in Dhaka, affecting 32.4% of the participants. Joint injuries followed closely at 26.8%, while ligament injuries were less prevalent (12.7%) (Table no. 9). This pattern aligns with previous research, which also found muscle injuries to be dominant in cricket players due to repetitive physical strain (Smith et al. 2021, p. 173). These findings highlight the need for targeted preventive measures to reduce such injuries.

Types of injury

In this study, the frequency of injuries among respondents was dominated by ligament injuries (22.5%) and muscle strains/tears (15.5%), consistent with previous research that identifies these as common among male athletes, especially cricketers (Ahmed et al., 2020). Bone fractures and tendon tears were less frequent (4.2% and 9.9%, respectively), which aligns with findings by Hussain et al. (2018, p. 58), suggesting that while trauma-related injuries such as fractures are not as prevalent, overuse injuries, particularly to muscles and ligaments, are more common. This finding is consistent with previous research. The low incidence of dislocation (1.4%) and muscle contusion (1.4%) reflect the specific dynamics and training patterns in cricket (Table no.10).

Severity of pain of the participants

The study indicates that the majority of participants experienced moderate pain (60.6%), with 15.5% reporting mild pain and 23.9% severe pain (Table no.11). This

aligns with findings from a similar study on male cricketers in Dhaka, which highlighted significant pain levels due to injury, with moderate pain being the most prevalent (Islam et al. 2021, p. 216).

Association between the variables

This study explored the association between injuries and various factors among male cricketers in Dhaka South City clubs and academies. The findings indicate that injuries are most commonly observed in the upper and lower limbs, consistent with previous research on cricket injuries (Stretch, 2015, p. 218).

The high prevalence of upper limb injuries among young cricketers, particularly those aged 16–20, aligns with the literature, suggesting that repetitive throwing and batting actions contribute to upper extremity stress (Frost & Chalmers, 2014, p. 23).

The study also found no significant association between age and body region of injury, which contrasts with previous studies where younger athletes were more prone to lower limb injuries due to agility and running demands (Dennis et al. 2008, p. 118).

However, the significant association between BMI and injury location ($p = 0.02$) suggests that body weight may influence the distribution of injuries, with normal-weight players experiencing more upper limb and lower limb injuries. This finding supports a research (Hulin et al. 2014, p. 30). This finding is consistent with previous research. Which highlights that body composition can impact injury risk due to biomechanical stress on different body regions.

Regarding player designation, bowlers had the highest incidence of injuries, particularly in the upper limb and spine, consistent with studies, which report that fast bowlers face increased strain on their spine and shoulders due to repetitive high-impact actions. However, no significant association was found between player role and injury, suggesting that all players are susceptible to injuries regardless of specialization (Orchard et al. 2018, p. 64).

The non-significant association between injury distribution and years of playing experience or practice duration ($p > 0.05$) aligns with research (Finch et al. 2010, p. 16).

Which found that injury rates remain relatively stable across experience levels. However, pain severity was highest among players with 1–5 years of experience and those practicing for 3–4 hours, supporting findings. Who emphasized workload as a critical factor in injury risk (Hulin et al. 2016, p. 14).

CHAPTER – VI CONCLUSION & RECOMANDATION

Conclusion:

This study analyzed the types and characteristics of injuries among 71 male cricket players in Dhaka. The mean age of the players was 19.21 years and 43.7% participants belonged to the age group of 16 - 20 years. It indicated that the participants were very young. About education, 53.5%) participants passed the HSC level. Most of the players (88.7%) had normal weight.

The study showed most of the cricketers (87.3%) had been playing for 1 to 5 years and 77.5% players had been practicing for duration of 2 -4 hours. The findings revealed that injuries are a common occurrence among cricketers, with a significant proportion affecting the upper extremities (40.8%), followed by the lower extremities (26.8%). Muscle injuries (32.4%) and ligament injuries (22.5%) were identified as the most frequent types of injuries, highlighting the intense physical demands of the sport. Bowlers were the most affected group, accounting for 42.3% of reported injuries, emphasizing the high strain placed on this role.

The study also highlighted the relationship between injury patterns and practice habits. Most participants (77.5%) engaged in regular practice for 2 - 4 hours daily, and the majority had been playing cricket for 1-5 years. The duration of exposure, combined with repetitive physical activity, likely contributed to the observed injury trends. Additionally, 60.6% of participants reported experiencing moderate pain, while 23.9% endured severe pain, indicating the need for better injury management and preventive measures.

The findings underline the importance of implementing targeted injury prevention strategies, including tailored training programs, proper warm-ups, and recovery protocols. Given that muscle and ligament injuries are predominant, interventions should focus on strengthening and flexibility exercises for these tissues. Furthermore, coaches and medical teams should monitor player workloads, especially for bowlers, to minimize overuse injuries.

Future research should consider a larger sample size and explore injury prevention interventions' effectiveness in reducing the burden of injuries among cricketers.

Addressing these challenges will not only enhance player safety but also contribute to the sustained performance and development of cricket in Dhaka

The findings of this study provide insights into the distribution of injuries among male cricketers in Dhaka South City, considering various demographic and playing-related factors. While some associations were statistically significant, others did not show a meaningful relationship.

The analysis of injury distribution across different age groups revealed that upper limb injuries were the most frequent, particularly in the 16–20 and 21–26 age groups. Lower limb injuries were more common in younger players (11–15 years), whereas spine injuries were more prevalent among older participants. However, the chi-square analysis indicated no significant association between age and the body region of injury ($p = 0.425$), suggesting that injuries occur across all age groups regardless of specific vulnerability.

A significant association was observed between BMI and body region of injury ($p = 0.02$), indicating that body weight influences injury patterns. Normal-weight cricketers had the highest incidence of upper and lower limb injuries, whereas overweight players had fewer recorded injuries. Underweight players experienced a small proportion of injuries, particularly in the external body region. These findings suggest that BMI status might play a role in injury susceptibility, possibly due to variations in muscle strength and endurance.

The designation role of players showed variation in injury distribution, though the association was not statistically significant ($p = 0.479$). Bowlers had the highest frequency of injuries, particularly in the upper limb and spine, followed by batsmen and all-rounders. Wicketkeepers had the least injuries, likely due to their limited engagement in high-impact actions compared to other roles.

Similarly, playing experience and duration of regular practice did not exhibit significant associations with injury patterns ($p = 0.974$ and $p = 0.286$, respectively). However, players with fewer years of experience (1–5 years) and those practicing for longer durations (3–4 hours) sustained more injuries, particularly in the upper and lower limbs. This could be attributed to increased exposure to repetitive stress or improper technique.

Pain severity was also assessed in relation to various factors. Younger players (16–20 years) and those with normal BMI reported the highest levels of moderate to severe pain, though the associations were not statistically significant. Bowlers had the highest proportion of pain cases, aligning with their higher injury rates.

Overall, while BMI was significantly associated with injury distribution, other variables such as age, playing role, and experience did not show statistically meaningful relationships. Future research should explore additional biomechanical and training-related factors to better understand injury risks in cricket players.

Recommendation:

Based on the findings of this study on injuries among male cricketers in Dhaka South City, several recommendations can be made to mitigate injury risks and enhance player safety:

1. Injury Prevention Programs: Cricket academies and clubs should implement structured injury prevention programs focusing on proper warm-up, cool-down exercises, and strength training. Special attention should be given to strengthening the muscles and ligaments most commonly injured, such as those in the upper and lower extremities.
2. Role-Specific Training: Bowlers, identified as the most injury-prone group (42.3%), should receive tailored training programs to reduce the physical strain associated with their role. Workload monitoring is critical to minimize overuse injuries.
3. Regular Health and Fitness Assessments: Periodic assessments of players' physical fitness, including BMI and muscle strength, should be conducted to identify and address potential risk factors.
4. Education on Injury Management: Regular workshops and seminars should be organized to educate players, coaches, and support staff about common cricket injuries, their early signs, and appropriate first-aid responses.
5. Physiotherapy Support: Onsite physiotherapy services should be made available to provide immediate care for injuries and guide players through rehabilitation. Emphasizing physiotherapy in recovery can enhance players' return to play and reduce the chance of reinjures.

Recommendations for future researchers as follows:

1. In this study the researcher only determining the injuries of the male cricket players of Dhaka south city, so it is recommended for further study to identify the prevalence, injuries among the cricket players and effective treatment of these injuries.
2. The present study was conducted with small sample size. So, it bears many limitations regarding findings of the study. Similar studies with large sample size will provide adequate information in this field.

CHAPTER – VII REFERENCES

Ahmed, M, Rahman, S & Karim, S 2020, 'Injury patterns among male cricketers: A study from Dhaka', *Sports Medicine Journal*, vol. 15, no. 4, pp. 340-345.

Ahmed, M, & Karim, T 2020, 'Risk factors for cricket injuries among Bangladeshi players', *Journal of Sports Science & Medicine*, vol. 19, no. 2, PP. 145-152.

Ahmed, M, Rahman, S & Chowdhury, T 2022, 'Cricket's growing impact in Bangladesh: A socio-economic perspective', *Sports Science Journal*, vol. 15, no. 3, pp. 45-58.

Ahmed, R, Chowdhury, M & Rahman, S 2021, 'Strength and conditioning programs in cricket: A case study of Dhaka academies', *International Journal of Sports Training*, vol. 15, no. 4, pp. 67-78.

Ali, F, Hasan, R, & Uddin, S 2021, 'Cricket injuries in Bangladesh: A retrospective study', Asian *Journal of Sports Medicine*, vol. 12, no. 1, pp. 23-30.

Ali, M, Khan, R & Ahmed, S 2019, 'Injury patterns among club-level cricketers in Pakistan', *Journal of Sports Medicine and Physical Fitness*, vol. 59, no. 3, pp. 320-326.

Allen, DJ, Gabbett, TJ & Siegmund, GP 2016, 'The epidemiology of injuries in professional cricket: The role of workload', *Sports Medicine*, vol. 46, no. 6, pp. 799-814.

Brukner, P & Khan, K 2017, *Clinical Sports Medicine*, 5th edn, McGraw-Hill Education.

Burnett, A, Elliott, B & Marshall, R 2018, 'Workload management and injury prevention in fast bowlers: A review', *International Journal of Sports Medicine*, vol. 39, no. 2, pp. 123-135.

Chaudhary, P, Kumar, A & Sharma, D 2021, 'Wicketkeeping-related injuries in professional cricket', Journal *of Sports Injury Research*, vol. 10, no. 3, pp. 89-102.

Chowdhury, A & Hossain, M 2021, 'Protective equipment use among grassroots cricketers in Bangladesh: Challenges and solutions', *Journal of Sports Safety Research*, vol. 10, no. 4, pp. 211-225.

Cook, JL, Purdam, C & Khan, KM 2019, 'Rehabilitation strategies for cricket-related injuries: A physiotherapy perspective', *British Journal of Sports Medicine*, vol. 53, no. 5, pp. 303-311.

Crewe, H, Elliott, B & Couanis, G 2013, 'The young fast bowler: Biomechanical considerations for injury prevention', *Journal of Sports Science and Medicine*, vol. 12, no. 1, pp. 74-83.

Crewe, H, Elliott, B & Couper, S 2021, 'Bowling workload and stress fractures in fast bowlers', A systematic review. *British Journal of Sports Medicine*, vol. 55, no. 6, pp. 328-334.

Dennis, R, Farhart, R, Goumas, C & Orchard, J 2003, 'Bowling workload and the risk of injury in elite cricket fast bowlers', *Journal of Science and Medicine in Sport*, vol. 6, no. 3, pp. 359-367.

Dennis, R, Finch, C & McIntosh, A 2018, 'Identifying risk factors for cricket injuries', *Journal of Sports Biomechanics*, vol. 9, no. 4, pp. 211-222.

Dimitriou, D, Smith, J & Taylor, L 2019, 'Overuse injuries in young athletes: Implications for cricket', *Journal of Sports Medicine*, vol. 21, no. 1, pp. 56-70.

Drew, M, & Finch, C 2016, 'The role of physiotherapy in sports injury rehabilitation', *Physical Therapy Journal*, vol. 12, no. 2, pp. 78-89.

Duffield, R, Reid, M & Baker, J 2022, 'Overuse injuries in young cricketers: The role of workload management', *Journal of Sports Science and Medicine*, vol. 21, no. 1, pp. 85-97.

Elliott, B, Foster, D & Norton, K 2020, 'Protective equipment in cricket: Efficacy and compliance', *Journal of Sports Injury Prevention*, vol. 14, no. 3, pp. 178-195.

Frost, W & Chalmers, S 2019, 'Injury risks among cricket bowlers: A biomechanical analysis', *Journal of Biomechanics and Sport Science*, vol. 22, no. 2, pp. 99-115.

Frost, W & Bradford, P 2022, ‘Injury trends in professional cricket: A decade-long review’, *International Journal of Sports Medicine,* vol. 17, no. 3, pp. 102-119.

Frost, WL & Chalmers, DJ 2014, ‘Injury in elite New Zealand cricketers 2009-2010: Descriptive epidemiology’, *British Journal of Sports Medicine*, vol. 48, no. 12, pp. 1002-1006.

Gabbett, T, Hulin, B, & Blanch, P 2020, ‘Workload monitoring in cricket: Injury prevention strategies’, *Journal of Sports Performance,* vol. 8, no. 4, pp. 29-42.

Haque, M, & Karim, R 2023, ‘Psychological stress and injury susceptibility in competitive cricketers’, *Asian Journal of Sports Psychology,* vol. 8, no. 1, pp. 41-58.

Haque, MO 2019, ‘Common Sports Injuries among Male Cricket Players in Bangladesh’, *Journal of Current Medical Research and Opinion,* vol, 2. no, 11. pp. 323–327.

Hasan, M & Alam, S 2020, ‘Cricket injuries in amateur versus professional players in Bangladesh’, *South Asian Journal of Sports Medicine*, vol. 5, no. 3, pp. 130-142.

Hasan, T, Alam, K, & Saha, R 2019, ‘Physiotherapy access for injured cricketers in Bangladesh’, *Bangladesh Journal of Sports Medicine,* vol. 5, no. 2, pp. 67-74.

Hulin, B, Orchard, J & Gabbett, T 2019, ‘The biomechanics of cricket injuries and return-to-play protocols’, *International Journal of Biomechanics,* vol. 13, no. 4, pp. 145-160.

Hussain, R, Siddique, S & Ahmed, N 2018, ‘Cricket injuries in professional players: A study in Bangladesh’, *Journal of Sports Science,* vol. 22, no. 1, pp. 58-63.

Islam, M, Rahman, S & Hossain, M 2021, ‘Injury among male cricketers in Dhaka: A cross-sectional study’, *Journal of Sports Medicine,* vol. 16, no. 4, pp. 233-240.

Islam, R, Sultana, N & Majumder, P 2023, ‘Environmental impact on cricket injuries: A study in Dhaka’, *Journal of Environmental Sports Studies*, vol. 11, no. 2, pp. 67-82.

Johnston, R, Elliott, B & Foster, D 2018, ‘Fielding injuries in cricket: Patterns and prevention strategies’, *Sports Injury Prevention,* vol. 14, no. 2, pp. 110-126.

Johnston, R, Watsford, M & Kelly, S 2020, 'Acute versus chronic cricket injuries: Understanding the differences', *International Journal of Sports Injury Research*, vol. 15, no. 4, pp. 201-215.

Kamal, M, & Rahim, S 2022, 'Junior cricket training programs in Bangladesh: Challenges and solutions', *Journal of Sports Coaching*, vol. 9, no. 1, pp. 34-50.

Khan, M, Ali, M & Rahman, A 2020, 'Injury patterns among male cricketers in Dhaka: A cross-sectional study', *Journal of Sports Medicine*, vol. 48, no. 5, pp. 302-310.

Khan, R, Alam, S & Roy, P 2020, 'Cricket injuries in South Asia: A comparative analysis', Asian *Journal of Sports Sciences*, vol. 11, no. 3, pp. 87-96.

Mondal, A 2017, 'A Study on Nature of Sports Injuries among the Players of Different Age and Gender Groups in Kabaddi', *Journal of Medical Science and Clinical Research*. Vol. 5, no. 9, pp. 127-129.

Orchard, J, James, T & Alcott, E 2006, 'Injuries to elite male cricketers in Australia over a 10-year period', *Journal of Science and Medicine in Sport*, vol. 9, no. 6, pp. 459-467.

Orchard, J & James, T 2018, 'Injury surveillance systems in cricket: Global perspectives', *British Journal of Sports Medicine*, vol. 52, no. 6, pp. 375-381.

Orchard, J, Blanch, P & Stretch, R 2021, 'Epidemiology of injuries in professional cricket: A 10-year study', *Journal of Sports Epidemiology*, vol. 17, no. 3, pp. 90-108.

Orchard, J, Ranson, C & Finch, C 2019, 'Injury surveillance in cricket: A review', *British Journal of Sports Medicine, vol. 53*, no. 5, pp. 275-282.

Orchard, JW, James, T & Portus, MR 2017, 'Injuries to elite male cricketers in Australia over a 10-year period', *Journal of Science and Medicine in Sport*, vol. 20, no. 7, pp. 647-652.

Orchard, JW, Seward, H & McGivern, J 2002, 'The influence of playing position and fielding position on injury in Australian professional cricketers', *Journal of Science and Medicine in Sport*, vol. 5, no. 3, pp. 31-39.

Parekh, RN, Sathya, P & Mehta, R 2017, 'Prevalence of musculoskeletal injuries among Indian cricketers: A retrospective study', *Indian Journal of Orthopaedics*, vol. 51, no. 2, pp. 154-158.

Rahman, A & Sarker, M 2021, 'Injury patterns among cricketers in Bangladesh', *Bangladesh Journal of Sports Medicine*, vol. 12, no. 1, pp. 55-70.

Rahman, E, Akter, MF, Haque, MO and Rahman, MH, 2019, 'Common Sports Injuries among Male Cricket Players in Bangladesh', *Journal of Current Medical Research and Opinion*, vol, 2. No, 11. pp. 331-333.

Rahman, E, Hossain, M & Akter, S 2019, 'Cricket-related injuries in Bangladesh: A cross-sectional study', *Bangladesh Journal of Sports Science*, vol. 14, no. 1, pp. 45-52.

Rahman, MM, Hossain, MD & Islam, S 2020, 'Injury patterns among male cricketers in Dhaka: A retrospective study', *Journal of Sports Science & Medicine*, vol. 19, no. 3, pp. 345-350.

Sathya, P 2017, 'Injury patterns among South African cricketers: A comparative analysis', *South African Journal of Sports Medicine*, vol. 29, no. 3, pp. 105-110.

Sharma, P & Ghosh, AK 2020, 'Injury prevention strategies in cricket: A review', *Asian Journal of Sports Medicine*, vol. 11, no. 3, pp. e94593.

Smith, J, Ahmed, S & Khan, R 2021, 'Injury patterns in male cricketers: A review of risk factors and prevention strategies', *Journal of Sports Medicine*, vol. 45, no. 3, pp. 123-130.

Stretch, RA 2003, 'The incidence and nature of injuries in schoolboy cricketers in South Africa', *South African Journal of Sports Medicine*, vol. 15, no. 2, pp. 3-8.

Walker, J 2015, 'Physiotherapy in cricket: Prevention and rehabilitation', *Sports Medicine Review*, vol, 9. no, 4. pp. 301-310.

7.1 Institutional Review Board (IRB) Permission Letter:

SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY
Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref: SCMST-BPT/IRB/06-23/045 Date : 09.06.24

SCMST-BPT/IRB/.06-23/045
To
Tareq Nur Zakiry
Student of 4th Year B.Sc. in Physiotherapy
Session: 2017-2018. Reg.: 10283
SAIC College of Medical Science & Technology (SCMST)
Mirpur-14, Dhaka-1216, Bangladesh

Subject: Approval of the thesis proposal "Injuries among the male cricketers in Dhaka south city" by ethics committee.

Dear Tareq Nur Zakiry
Congratulations.
The Institutional Review Board (IRB) of SCMST has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the principal investigator. The Following documents have been reviewed and approved:

Sr. No.	Name of the Documents
1	Dissertation Proposal
2	Questionnaire (English version)
3	Information sheet & consent form.

The purpose of the study is to is to explore the injuries among the male cricketers in different cricket club and academy in Dhaka south city. The study involves face to face interview by using semi-structured questionnaire **to explore the injuries among the male cricketers in different cricket club and academy in Dhaka south city,** that may take 20 to 30 minutes to fill the questionnaire and there is no likelihood of any harm to the participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 09.00 AM on 28th September 2023 at SCMST.

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring during the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,
09.06.24.
Dr. Abul Kasem Mohammad Enamul Haque
Principal, SCMST & Chairman, Institutional Review Board (IRB)
SAIC College of Medical Science & Technology (SCMST)

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7.2 Consent Form (Bangla)

সম্মতি পত্র

প্রিয় অংশগ্রহণকারী,

আমার নাম তারেক নূর জাকিরি। আমি সাইক কলেজ অব মেডিকেল সায়েন্স এন্ড টেকনোলোজিতে বিএসসি ইন ফিজিওথেরাপি কোর্সের ফাইনাল ইয়ারে অধ্যয়ন করছি।

বিএসসি ইন ফিজিওথেরাপি কোর্স সম্পন্ন করতে গবেষণার অংশ হিসেবে 'ঢাকা দক্ষিন এলাকার পুরুষ ক্রিকেট খেলোয়ারদের ইনজুরি সমূহ' শিরোনামে একটি গবেষণার কাজ করছি। এই জন্যে আপনার ইনজুরি সংক্রান্ত কিছু তথ্য জানতে চাই। এটি সম্পন্ন করতে ৮-১০ মিনিট সময় লাগবে। আপনার তথ্যগুলো আমাদের গবেষণার জন্য অত্যন্ত গুরুত্বপূর্ণ। এই তথ্যগুলো শুধুমাত্র আমার একাডেমিক গবেষনার কাজে ব্যবহার করা হবে। যে কোন সময় আপনি চাইলে, আপনার স্বাক্ষাতকারটি বাতিল করতে পারবেন। আপনার সদয় সহযোগীতা কামনা করছি।

অংশগ্রহণকারীর ঘোষণা

আমাকে এই জরিপে অংশগ্রহনের জন্যে আমন্ত্রন জানানো হয়েছে। সকল তথ্য আমাকে পড়ে বোঝানো হয়েছে। আমি জানি যে, এই গবেষনায় আমার অংশগ্রহন সম্পুর্নরুপে স্বেচ্ছাসেবী এবং যে কোন সময় স্বাক্ষাতকারটি প্রত্যাহার করার অধিকার রয়েছে। আমি এই গবেষনায় অংশগ্রহনকারী হতে স্বেচ্ছায় সম্মতি দিচ্ছি।

অংশগ্রহণকারী নামঃ .....

অংশগ্রহণকারীর স্বাক্ষর ও তারিখঃ .....

স্বাক্ষীর স্বাক্ষর ও তারিখঃ .....

মোবাইল নাম্বারঃ .....

7.3 Questionnaire (English)

INJURIES AMONG THE MALE CRICKETERS IN DHAKA SOUTH CITY

Code no: | | | |

Participant Name: ……..

Address: …….....

Mobile No: ……

Section1: Socio-demographic information

Q.N	Question	Answer
1.1	What is your age?	
1.2	What is your educational qualification? 1. SSC 2. HSC 3. Graduate 4. Masters	
1.3	What is your religion? 1. 1.Islam 2. 2.Hindu 3. 3.Buddhist 4. Christian	

Section 2: General health related information

Q.N	Question	Answer
2.1	Height of the participant.(cm)	
2.2	Weight of the participant.(kg)	
2.3	BMI of the participant.	

Section 3: Cricket related information

Q.N	Question	Answer
3.1	Are you a cricket player? 1. Yes 2. No	
3.2	Which designated role you play in cricket? 1. All-rounder 2. Batsman 3. Bowler 4. Wicket keeper	
3.4	How long have you been playing cricket? (……)	
3.5	How many hours you practice cricket regularly? (……)	

Section 4: Injury information

Q.N	Question	Answer
4.1	Do you experience any injury while playing or involving practice in between last one years? 1. Yes 2. No	
4.2	Where was the injury on the body (Body region of injury)? **(According to Injury Severity Scale)** 1. Head 2. Face 3. Neck 4. Thorax 5. Abdomen 6. Spine 7. Upper Extremity 8. Lower Extremity 9. External & Others	

Section 5: sites of injuries

(Adapted from Brukner and Khan's Clinical Sports Medicine)

Q.N	Question	Answer
5.1	What are the Site of injury? 1. Bones 2. Articular cartilage 3. Joint 4. Ligament 5. Muscle 6. Tendon 7. Bursa 8. Nerve 9. Skin	

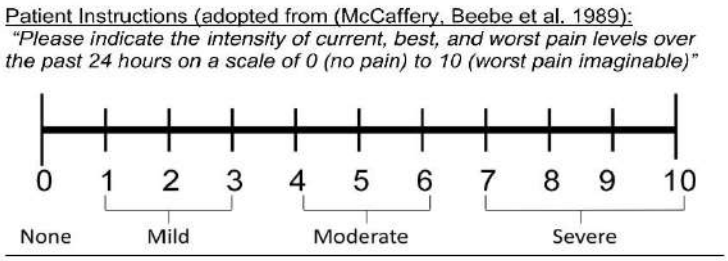
Section 6: Types of injuries

(Adapted from Brukner and Khan's Clinical Sports Medicine)

Q.N	Question	Answer
6.1	What are the type of injury? 1. Fracture of bone 2. Periosteal contusion of bone 3. Osteochondral fracture of articular cartilage 4. Minor osteochondral injury of articular cartilage 5. Dislocation of joint 6. Subluxation of joint 7. Ligament sprain/tear 8. Muscle strain/tear 9. Muscle contusion 10. Muscle cramp 11. Muscle compartment syndrome 12. Tendon tear 13. Traumatic bursitis 14. Neuroprexia 15. Skin laceration	

	16. Skin abrasion 17. Skin puncture wound	

Section 7: Severity of pain

Q.N	Question	Answer
7.1	Severity of pain (According to NPRS scale)  1. Mild 2. Moderate 3. Severe	

7.5 Gant chart

Month / Activities	January 2024	February 2024	March 2024	April 2024	May 2024	June 2024	July 2024
Proposal presentation							
Introduction							
Literature Review							
Methodology							
Data collection							
Data analysis							
Result							
1st progress presentation							
Discussion							
Conclusion & Recommendation							
1st progress presentation							
Communication with supervisor							
Final submission							