Characteristics of Sports Injuries Among Adult Players

By

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Statement of Authorship

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Dedication

Dedicated to my

Beloved Parents & Honorable Teacher.

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List of Abbreviations

ACL: Anterior Cruciate Ligament

ADL: Activities of Daily Living

AIUB: American International University of Bangladesh.

BHPI: Bangladesh Health Professions Institute

BMI: Body Mass Index

CRP: Centre for the Rehabilitation of the Paralysed

DUET: Dhaka University of Engineering & Technology

GB: Gaibandha

HSTU: Hajee Mohammad Danesh Science and Technology University

IBR: Institutional Review Board

JU: Jahangirnagar University

OT: Occupational Therapy

PCL: Posterior Cruciate Ligamemt

SPSS: The Statistical Package for Social Science

VAS: Visual Analogue Scale

WHO: World Health Organization

UP: Upper Extremity

LE: Lower Extremity

DOC: Direct Orthopedic Care

SPARQ: Speed, Power, Agility, Reaction and Quickness.

AC: Acromioclavicular

Abstract

Background: Sports injuries are a common incidence among athletes and individuals who participate in physical activities. Daily publications have reported that sports injuries are an increasing issue for both male and female athletes around the world. As a result of the growing population, the number of players is also increasing. Sports-related incidence is more common for Bangladeshi players & it affects their performance in Daily life. The aim of the study to identify the characteristics of sports injuries among adults when they participate in organized sports.

Methodology: A quantitative cross-sectional study design was chosen to achieve the objectives of the study. 108 participants were selected through a purposive sampling technique.

Result: The result of the study find that the common age group was 24-29 years 52.8% (n=57) & 90.3%(n=100) were male participants. The most frequent sports injury was single events 36.11% (n=39) and the less injury rate was found who engaged in sport training for 4 years 5.6% (n=6). Most commonly players are affected by direct injury 79.6% (n=86). Most common injured area found that 53.7% (n=58) of participants have tennis elbow, 51.9% (n=56) of have hamstring strain and in the lower limb, 53.7% (n=58) of participants were injured in the thigh, and in upper limb 50.9% (n=55) of participants were injured in the forearm, and their 80.6% were normal weight. The higher percentage of injury is moderate 74.1% that causes 64% (n=69) have problems in self-care. The finding also reflects that the participants 82.4% (n=89) were taken medicine as a treatment, 13% (n=14) were taken rehabilitation services.

Conclusion: This study concludes that there was tennis elbow & hamstring strain is most common problems in players. Thigh, Forearm & wrist were the most commonly injured area in all player, it also affects their daily life. This would be to understand the risk factors that lead to sports injuries and to develop effective prevention strategies and treatments. Sports injury is a very serious issue. So, we need to ensure safety and healthy participation in sports and for improving players' quality of life in society as a whole.

Keywords: Characteristics, Sports Injury, Adult Players

CHAPTER- I INTRODUCTION

1.1 Background

Sports injury is a significant public health concern that affects individuals of all ages and abilities who participate in physical activities and sports (Emery et al., 2018). The incidence of sports-related injuries has been increasing in recent years due to various factors such as increased participation in sports and physical activities, changes in sports rules and regulations, and advancements in equipment technology (Emery et al., 2018). Sports injuries can have significant physical, psychological, and economic impacts on athletes, their families, and society as a whole. A nation's national pride is inextricably intertwined with sports; players are acknowledged internationally for their great performances in international competitions (Merlino et al., 2012). Annually, FIFA, the ICC, the Olympic committee, and many sporting events are organized by sports organizations and others. The global media attaches great significance to and covers sports news (Junge et al., 2004). A few decades ago, we viewed sports solely as entertainment. However, in the modern era, sport is a vocation. In early childhood, parents enroll their children in a sports academy to develop them into future players. As the global population has increased dramatically and as the popularity of popular games has risen, more and more people are becoming interested in athletics and sports. As the number of sports institutes increases, they organize more and more sporting events.

Adult players participate in sports for recreation, health, and professional development. As competition increases, adult players exercise harder and longer, resulting in sports-related

injuries (Sreekaarini et al., 2014). There is a dearth of such studies in India; to our knowledge, only one study has documented injury rates in football and basketball, while another has recorded injury rates in other sports. Therefore, it is necessary to understand the occurrence, type, and contributing factors of injuries in regularly practiced sports such as football, hockey, cricket, badminton, and basketball (Sreekaarini et al., 2014). Whether participation is for competition or recreation, accidents are unavoidable in sports. With about 30 million individuals engaged in some form of sport, injury prevention, management, and treatment are essential. Several factors, including the presence of growth cartilage, which is less resistant to repetitive microinjury than an adult counterpart, skeletal immaturity, and aggressive training, decreased flexibility due to a pronounced growth spurt, the tendency to experiment and take risks during the sport, and a different physiologic response to exercise, make adults more susceptible to injury (Sreekaarini et al., 2014).

Sports injuries are a common incidence among athletes of all levels, from beginners to professionals, These injuries can range from minor sprains and strains to more severe fractures and concussions, and they can have a significant impact on an athlete's physical and mental health, as well as their performance on the field (W. et al., 1992). According to a study published in the British Journal of Sports Medicine, sports injuries are the leading cause of emergency department visits in individuals aged 5 to 24 years old, with an estimated 2.6 million visits per year in the United States alone (Emery et al., 2018). The study also found that the most common types of sports injuries were strains and sprains, followed by fractures and contusions. According to all kinds of daily newspapers, we know sports injuries create considerable difficulty for both male and female athletes around the

world. Many exceptional athletes were unable to compete, and a big event was lost because of injuries. This sports-related incidence is more severe for Bangladeshi players (R. Hawkins, 2006).

Various factors contribute to the occurrence of sports injuries, including intrinsic factors such as age, sex, and previous injury history, as well as extrinsic factors such as the type of sport, playing surface, and equipment used. Additionally, sports injuries can have long-term consequences such as chronic pain, reduced mobility, and increased risk of future injuries (Hootman et al., 2007). Sports injuries can have a considerable impact on an athlete's physical and mental health, affecting their ability to participate in sports and their quality of life. This research study findings helps the players to know about sports injury related information & it’s effects on their daily life.

1.2 Justification of the study

Injuries are common in any sporting event. In many country's studies have dealt with common sports injuries among the players. But there has not conducted any study before about the exact nature and characteristics of sports injury in Bangladesh. This study was formulated to fill the knowledge gap in this area. The aims of the study were to identify the characteristics of adult with sports injuries sustained during organized sports. And from this study, awareness will increase, and it may provide proper recommendations for every single risk, which will be helpful for players. Aside from this, it will help establish proper guidelines and proper techniques. This study will also help to discover the areas where a sports player lacks, especially their posture before doing any activities. Besides this, it will help with professional development, which is mandatory in the current situation. So occupational therapists can help them teach and give proper education about posture, the condition, and preventive methods. And it will help to discover the role and importance of occupational therapy in every sector of Bangladesh.

1.3 Operational definition

1.3.1 Sports Injury: Common types of sports injuries are broken bones, soft tissue lesions (laceration, abrasion, contusion), poisoning, and burns. Injury results from harmful contact between people and objects, substances, or other things in their surroundings. Sports injuries result from acute trauma or repetitive stress associated with athletic activities.

1.3.2 Sports person: A person trained to complete sports or exercises involving physical strength, speed, or endurance, or a person who has a natural aptitude for physical activities, is a sportsperson. Those who are participants involved in athletic activity are called "sports players.

1.4 Study Question

What are the Characteristics of Sports Injury among adult players?

1.5 Aim of the study

To identify the characteristics of adult with sports injuries sustained during organized sports.

1.6 Objective

- To identify the socio-demographic information of the participants.
- To find out the health status of the participants.
- To find out the injury-related information of the participants.
- To find out the occupational status of their participants.
- To find out the injured participant treatment seeking behavior.

CHAPTER- II LITERATURE REVIEW

Sports participation is highly regarded and considered vital in many cultures. Sports can have a significant impact on the lives of many people, whether they play, or participate for recreation, job, or social reasons. There are over 30 million teenagers and kids who play sports in the United States. Each year, roughly 3.5 million of these 30 million adults suffer injuries. Despite the fact that not all injuries are severe, many of them need some sort of rehabilitation to recover. There is typically just a sports trainer on staff for high school sports, and many youth sports teams don't have access to an urgent healthcare provider, so parents are left to figure out how to provide their kids the care they need (Host & Mankie, 2018).

Sports-related injuries are wounds sustained while playing sports or working out. Overtraining, poor conditioning, and inappropriate form or technique can all result in sports injuries. The risk of sports injuries rises in the absence of a warm-up. Sports injuries can cause bruising, strains, sprains, rips, and fractured bones. Affected soft tissues include muscles, ligaments, tendons, fascia, and bursae (Hachigian-Gould et al., 2016). According to a study by Stoppler (2018), the phrase "sports injury" refers, in the broadest sense, to the types of injuries that are most frequently sustained during sports or exercise. Although almost any area of your body might be hurt while participating in sports or exercising, the phrase "musculoskeletal injury" is often reserved for wounds that affect the muscle.

According to Eastman & Chang (2015), examine the dearth of research on environmental treatment integration. In the rehabilitation process, it is necessary to consider the areas in which a person spends time and the circumstances that may affect their participation in

activities. A void was discovered in the literature regarding the habits, roles, and routines that individuals develop as a result of participating in sports, as well as the significance it may have for an individual. The impact of a job's significance on an individual's health and happiness has not yet been investigated (Kramer, 2003). The significance of outdoor sports participation might also derive from its social features (Reed, 2011). Due to this, (Stein et al., 2016) addressed the function of social support in sports and how it can alter an individual's performance. However, there is a dearth of research on what OT can do to address these social aspects of recovery and its role in preventing sports-related injuries. The sports injuries connected with cricket, football, badminton, table tennis, and basketball include concussion, brain injury, visual field injury, spinal cord injury, and motor skill injury. All of these are ailments that occupational therapists frequently treat. Literature indicates OT is still not typically regarded as a member of a sports rehabilitation team (Reed, 2011). Since OT is not commonly linked with this field, there may be a lack of awareness among sports players about how occupational therapists might help them accomplish their requirements and objectives. According to research, it is vital to consider an interdisciplinary strategy combining OT to aid in the healing of players with sports-related injuries (Stephens et al., 2015).

Occupational therapy Treatment for sports Players Hockey, badminton, table tennis, and tennis is a sport that can result in several injuries. Two of the most studied sport-related ailments are concussions and upper extremity injuries. The rehabilitation of these injuries in relation to sport-specific treatment is not the focus of the studies done. However, the knowledge gleaned from the present study can be utilized to develop therapy strategies involving sports-related tasks. When evaluating a concussion patient, it is essential to

consider any physical, cognitive, and visual problems that may have occurred. In addition, all significant occupations and the surrounding environment must be incorporated into treatment for a full recovery. This can be achieved through evaluation, interventions, and results that are centered on the client and supported by evidence. Concussion An estimated 1.6 to 3.8 million sport-related concussions occur annually at the professional and amateur levels in the United States, making it one of the most prevalent injuries (Fait Philippe PhD et al., 2013). The repercussions of a concussion can have a substantial impact on activities other than sports, including education and employment. Occupational therapists play a role in the treatment and prevention of concussion injuries that facilitate a return to play and other purposeful jobs. There have been numerous studies examining the efficacy of Occupational therapy for concussions. Previously, cognitive and physical rest were recommended for concussion treatment (C et al., 2011).

A researcher (Buckley et al., 2016) questioned the extent to which rest and limiting participation in daily activities aided in healing. As sleep disturbance was revealed to be a post-concussion symptom, rest was questioned (McAllister et al., 2002). According to Buckley et al., (2016), highlighted that recent research is all tends to the same conclusion in which active daily engagement and attention to sleep disruptions are standards for the treatment of concussive symptoms. The results of (Buckley et al., 2016) study demonstrate that engagement in exercise is vital for healing after a concussion, yet symptoms may still be disturbing one's capacity to participate. This is an area where OT could play a role in developing ways to help the individual retain engagement in daily activities.

These types of tactics can play a part in occupational therapy approaches. Occupational therapists are educated in the use of mental imagery, stress reduction techniques, and

modest aerobic activities. Once post-concussion symptoms subside, the greater effort can be invested (Reed, 2011) In the interim, OT plays a role in maintaining everyday engagement after a concussion through energy conservation instruction (Reed, 2011). Occupational therapists evaluate each client to identify areas where physical and mental energy conservation techniques could be utilized to sustain involvement in typical roles, routines, and activities. Techniques of energy conservation should be implemented to prevent the individual from overexerting themselves and from losing interest in meaningful activities. Once more energy can be invested, the focus of rehabilitation can shift to regaining skill performance in meaningful occupations. According to Reed et al. (2016) discovered that when adults returned to sports-related tasks following a concussion, their strength performance declined. There was a decline in handgrip strength, which is crucial for grasping the handle grip of a bad. Physical duties such as squat hops, which are connected with the ability to skate and communicate with other players on the rink, also decreased (Reed et. al 2016). This decline limited the youth's effectiveness on and off the rink and predisposed them to additional injuries. By examining each individual, OT addresses the maintenance and restoration of abilities that contribute to involvement in daily activities. According to (Harmon et al., 2013) discovered that the type of sport, the positions of the players, and their particular playing styles all influence the severity and prevention of concussions. Because the symptoms and severity of a concussion vary from person to person, research has led to an emphasis on a tailored, client-centered diagnostic and treatment strategy. Research supports the use of neuropsychological testing as part of a multidisciplinary approach to customized care (Stewart et al., 2012). This evolution and push towards a personalized approach has resulted in the production of technology suitable

for assessing patients according to this demand. The Nike 13 SPARQ Sensory Performance System is one assessment that can be conducted. This is a computer-based vision evaluation that employs sport-related visual and sensory performance skills to create an individual sensory performance profile that outlines a player's visual strengths and weaknesses (Poltavski & Biberdorf, 2014). The system analyzes player performance data and converts it to normative data so that players' performances can be compared players actively participate in this evaluation by using a portable Apple iPod Touch that is wirelessly linked to a computer monitor (Poltavski & Biberdorf, 2014). The Nike SPARQ Sensory Performance System examines visual acuity, contrast sensitivity, depth perception, and target acquisition (Poltavski & Biberdorf, 2014). The authors discovered that 69% of the variance in goals scored could be predicted by the player's faster reaction time to visual input, improved visual recall, enhanced visual discrimination, and increased ability to shift focus between near and far objects (Poltavski & Biberdorf, 2014). Occupational therapists could benefit from the use of such evaluation instruments in the formulation of therapies, since the results gained can aid in the design of evidence-based and client-centered treatments. Each evaluation focuses on the cognitive and visual impacts of a concussion, which must be considered in addition to the physical effects. A therapist can build an effective treatment plan based on the findings of these tests, which are used to determine the problems at hand. The goals, actions, and results of a treatment plan are centered on the client, and the plan is evidence-based. Interventions must encompass not just the restoration of lost physical abilities, but also cognitive and visual talents. According to Schwab and Memmert (2012) came to the conclusion that certain visual and/or cognitive

abilities that may be impaired after a concussion can be retrained. This includes peripheral perception and selective reaction time.

Injuries can also occur if a person is not adequately prepared to perform a sport, such as by not warming up or stretching beforehand. Certain precautions should be done to reduce the danger of sports injuries. Resting between workouts allows the body to recuperate and restore itself. Starting gently and gradually developing strength, flexibility, and endurance reduces the chance of injury by allowing muscles, bones, and other tissues to adapt to increasingly challenging workouts. Lastly, listening to the body and slowing down at the first sign of pain, discomfort, tension, or overheating will lessen the likelihood of sports injuries. The foot, knee, ankle, thigh, and head are the areas most frequently injured while practicing taekwondo, while contusions, strains, and sprains are the most common ailments identified. Another study (Kazemi et al., 2009) found that the head (19%), foot (16%), and thigh (9%) are the three most common injury sites, whereas contusions (36%), sprains (19%), and strains (15%) are the most common injuries diagnosed. This naturally increases the risk of concussion, and according to research, taekwondo players have four times the risk of concussion compared to American football players. This is especially true for adults, who may not always employ protective equipment as readily as adults (Steve, 2019). Chronic and acute injuries are the two basic classifications of sports injuries (Hong, 2017).

2.1 Acute Injury

According to (Hong et al., 2017) an acute injury is one that happens rapidly and is typically linked with trauma such as bone fracture, muscle rupture, or bruise. It could be the result of a fall or collision with another player. In contrast to chronic injuries, the symptoms of an acute injury manifest within two weeks. Acute injuries are characterized by abrupt, severe pain, swelling, difficulty to bear weight on a lower limb, great discomfort in an upper limb, inability to move a joint through its full range of motion, significant limb weakness, and obvious dislocation or fracture of a bone. Acute injuries come from impact-related events, such as striking an opponent, receiving a kick, or breaking a board, (Steve, 2019). Acute injuries are typically caused by direct contact. This includes injuries such as a broken nose from a head kick, bruising, contusions, other broken bones, etc. These injuries are also known as traumatic injuries since they result from a traumatic occurrence. According to Direct Orthopedic Care (DOC), an acute injury is abrupt and severe, such as a broken bone, and if left untreated, it can lead to chronic syndrome. According to Schlüter-Brust et al., (2011) another study on the subject, the majority of lower extremity injuries were contusions and sprains. Professional Taekwondo players are more susceptible to injury than amateur competitors. Warm-up exercises were found to have a positive effect on injury rates. Taekwondo style, weight class, and competition frequency all influence the injury profile of the player. If injuries during Taekwondo tournaments can be avoided, Taekwondo may be considered a relatively harmless hobby. If not, Taekwondo can cause severe musculoskeletal issues.

2.2 Overuse and Chronic Injury

In one study by (Hong et al., 2017) the overuse injury is the result of prolonged, repeated motion that is particularly common in endurance sports. As such, chronic injuries are commonly referred to as overuse injuries — injuries occurring from overusing one body area when playing a sport or exercising over a lengthy period. Stress fractures, tennis elbow, shin splints, runner's knee, and heel inflammation are examples of overuse injuries. These ailments come from poor technique, striving to improve too quickly, or overdoing certain actions when playing a sport. In addition, he stated that the distinction between chronic and acute injuries lay in their signs and symptoms. This indication in chronic or overuse injuries comprises pain when performing an activity, a dull aching when at rest, and swelling. Moreover, overuse injury overloads the capacity of the tissue to repair itself due to repetitive action. If the injury appears small but does not improve with self-care, you should consult a physician. Consult your physician with any ailment that impacts your training but has not been treated. A research study by (Yalfani et al., 2019) revealed that females with lower rank in experience level were more likely to suffer from chronic overuse injuries compared to their male counterparts, who reported more acute injuries. Contrary to acute injuries, cumulative injuries can occur at any time, even without contact, According to a Taekwondo Nation quote. They may include muscular strains, torn ligaments, sprained knees, tendinitis, and other conditions. Typically, they are caused by continuous stress on bones and ligaments, inappropriate care with regard to warming up and cooling down, or insufficient stretching (or too much).

2.3 Upper Extremity Injury

Upper extremity game-ending injuries are frequently the result of concussions. A treatment plan for an injury to the upper extremity must be as complete as one for a concussion. In addition to addressing the physical deficiencies caused by an upper extremity injury, an occupational therapist will also address the emotional and psychological abnormalities. Although there is fewer data explicitly tying OT to addressing these components, there is a need for occupational therapy as injuries persist. Many players, particularly badminton, and hockey players, are susceptible to upper extremity (UE) injuries. These injuries have a negative impact not only on their sports-related involvement but also on their daily activities. The upper extremity comprises hand, wrist, elbow, and shoulder injuries. These injuries can result in a reduction in range of motion, fine motor, gross motor, and coordination skills. The researcher (Keightley et al., 2013) investigated upper extremity injuries at all levels of development. The authors discovered that injuries to the hand, wrist, elbow, or shoulder were among the top three types of injuries sustained by players (Keightley et al., 2013). Despite the varied play limits, the frequency of injuries incurred in female players did not differ much from male players, According to the authors (Keightley et al., 2013) In another study conducted by (Moslener & Wadsworth, 2010) tournament play in adult was found to be four to six times more dangerous than regular season play. Age progression is associated with a rise in injury risk (Jouko Mölsä et al., 2003). The author (Moslener & Wadsworth, 2010) discovered that once body checking is introduced throughout adult, the number of injuries peaks. Fractures, sprain or strain, and dislocation were the leading injuries to this region of the body (Moslener & Wadsworth, 2010). These types of accidents can lead to persistent discomfort and require time to

recover, resulting in decreased occupational engagement. The elbow, acromioclavicular (AC) joint of the shoulder is the most frequently injured UE structure for sports players (Popkin, 2017). The optimum treatment option for any injury to the UE is non-operative care. When this type of injury occurs, ice and a comfort sling are the initial treatments prescribed. Depending on the degree of the injury, treatment may include range-of-motion (ROM) exercises, strengthening, cryotherapy, and rest. However, evidence indicates that return to play requires the full range of motion, normal strength, and minimum discomfort and that shoulder injuries increase the risk of reinjury. Players are able to return to play when their motivation and desire to participate are high, which increases the number of individuals who return to play sooner. Occupational therapists can treat injuries to the upper extremities with sport-specific therapies to help patients regain function and continue to participate during recovery. According to a study by Fair et al. (2010), the addition of complexity to an environment affects sports skill performance. In the study, skating, stick handling, and obstacle avoidance were all observed and studied. Occupational therapy focuses on analyzing skill performance by conducting relevant jobs. Occupational therapists have the skill and imagination to replicate surroundings as realistically as feasible. Performing sports-related tasks in a specific context and assessing the tasks by decomposing them into gross motor, fine motor, and coordination tasks will provide a better understanding of how to grade tasks according to a player's degree of function. Interventions can then be designed to improve their coordination, motor abilities, and endurance (Host & Mankie, 2018).

CHAPTER- III METHODOLOGY

3.1 Study design

3.1.1 Quantitative Method

Quantitative research is the process of collecting and analysing numerical data. It can be used to find patterns and averages, make predictions, test causal relationships, and generalize results to wider populations. This methodology was chosen to fulfill the aim of the study as an effective way to collect data (Bailey, 1997).

3.1.2 Study Approach

This study was done using a cross-sectional prospective survey under a quantitative study design. A survey is a way of conducting research where information is collected from a large number of people using an interview or questionnaire, by which a complete picture of the group can be found in term of any characteristics which fulfills the demand and purpose of the research. This research analyzes different facts, events, and similar points to find a result and draw a calculative decision. For this reason retrospective approach is taken to conduct this research work (Hicks, 2009).

3.2 Study setting and period

The study was conducted at different sports clubs in Dhaka and other cities as BHPI sports club, Clemon math sports club, Duet sports club, Mohammadpur sports club, Sarwar badminton academy, GB stadium academy, HSTU sports club and JU sports club in Savar, Dhaka. The researcher chose this type of sports club as a study site because these institutes

which aim to find out the promising sports talents among adult boys and girls in our country, provide adequate facilities and opportunities for their intensive training. The period of the study was from April 2022 to march 2023. Data were collected within 4 weeks of time. From 01/11/2022 to 06/12/2022, the data was collected carefully as possible from the field data.

3.3 Study participants

3.3.1 Study population

Populations were the injured sports player of some sports clubs in Dhaka & other cities who are suffer from injury during playing.

3.3.2 Sampling technique

Samples were selected by a purposive sampling procedure. I have purposefully selected 8 institutions and organizations where game trainers are available and they have the opportunity to organize games, and I sent a letter of invitation for participation in this research study. I interviewed each player from the selected organization and institution.

3.3.3 Inclusion criteria

- Adult Players who are playing different kinds of games.
- Adult Players who had sports-related injuries.
- Adult Players who had injuries in between last 2 years.
- Adult Players who had the medical report and was given treatment & take medicine.
- Age group: Adults only.

3.3.4 Exclusion criteria

- Players those who are not adults or not injured by playing event.
- Players who are injured more than 2 years ago.
- Players who are not willing to participants.

3.3.5 Sample size

Sampling procedure for cross-sectional study is done by following the equation-

$$n = \frac{z^2 \times pq}{d^2}$$

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

$$= \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05 \times 0.05)^2}$$

= 384

N= Sample size

Z= The standard Normal deviated usually set at 1.96 which correspondent to 95%

p= 50% =0.5

q= (1-q) = 0.5

d= 0.05 degree of accuracy required.

So the researcher initially aimed to focus his study on 384 samples, following the calculation above. The study was done as a part of a fourth professional academic research project, but due to lack of accessibility and time constraints, there were some limitations, so the researcher had to limit the sample size to 108 players as a sample for this study. 108 players were taken as samples by the purposive sampling procedure.

3.4 Ethical considerations

The researcher maintained some ethical considerations according to the Helsinki act (1975) these are given below:

Before conducting the research, the investigator took permission from the Institutional Ethical Review Board of CRP/BHPI/IRB/09/22/629. (Bangladesh Health Professions Institute)

I. The researcher took permission from the institutional ethical review board through the department of OT, BHPI to conduct the research.
II. Ethical consideration ensured by means of an informed consent letter.
III. The researcher-maintained confidentiality about the service information of the institutes.
IV. The researcher ensured that confidentiality is maintained by the participants.
V. All participants were informed about the aim of the study.
VI. The researcher was available to answer any study-related questions or inquiries from the participant.
VII. All sources were cited and acknowledged appropriately.

3.5 Data collection process

Though there were several ways of collecting data, it was easy and reliable if the questionnaire was completed or filled out in the presence of the researcher. (Bailey, 1997) After getting written informed consent from the club's players and their trainers, a pretested, closed-ended, semi-structured questionnaire was used to collect the data. Researchers were involved in this study to conduct face-to-face interviews and create a Google Doc file where the questionnaire was included for collecting data from other cities. Researchers also assisted the players in completing the interview if they faced any confusion. The average time of the interview was 15–20 minutes. In the questionnaire, participants' socio-demographic information, including age, level of education, training age, health, and history, including their injury, was asked. Data collection is one of the most crucial parts of research. For this study, data collection includes the method of data collection, materials used for data collection, and duration.

3.5.1 Data collection method

The data were collected from the filed data from BHPI sports club, Clemon math sports club, DUET sports club, Mohammadpur sports club, Sarwar badminton academy, GB stadium academy, HSTU sports club, and JU sports club. Data were collected using a closed-ended, structured questionnaire. A questionnaire is used because questionnaires are still a very popular and useful technique of data collection in the health care area (Hicks, 2009). Additionally, the aim of the study was to identify the characteristics of sports injuries among adult players. So, it is easier to identify these problems by using questionnaires than any other method. The strength of a structured questionnaire is its

ability to collect unambiguous and easy-to-count answers, leading to quantitative data for analysis. So, a structured questionnaire is the most suitable way for data collection. A questionnaire was used to collect the data from the face-to-face interview.

3.5.2 Data collection Instrument

The materials and tools for this study were a consent form, questionnaire, pencil, pen, pages, file, tape, laptop, modem, and SPSS (Statistical Package for the Social Sciences) software (25.0) to analyze the data.

3.5.3 Participant recruitment process

Researcher went to the sports club and took permission from the authority to collect data & selected the participants who fulfilled the inclusion criteria. After selecting participants investigator took consent from the participants and collected data.

3.6 Data Management and Analysis

The data were analyzed with the software named Statistical Package for Social Science (SPSS), version 25.0. And descriptive statistics were used to analyze the data because descriptive statistics refers to methods of describing a set of results in terms of their most interesting characteristics (Hicks, 2009). The variables were labeled in a list, and a researcher is keeping a computer-based data record file. And after calculation, the data is presented using a bar graph and a table using Microsoft Office Excel 2016.

3.7 Quality control and Quality assurance

All data was accurately done with the concern of the respective supervisor and followed all instructions. Before using the method, ensure that the using methods have been validated as fit for the purpose. Before collecting the final data, a pilot survey was conducted to evaluate the participant's level of understanding of the self- developed questionnaires. Investigator selected 3 participants for piloting. After completing the pilot survey investigator modified the questionnaires based on the piloting experience. Through this field test investigator understood the barriers of the study. It helped the investigator to find out difficulties and get a chance to correct the questionnaires to make them easier and more understandable.

CHAPTER- IV RESULT

The goal of the study was to identify the characteristics of the adult with sports injuries sustained during organized sports to achieve this goal the result needs to calculate and analyze in a systematic way and the result or analyzed data is represented by a table and bar.

Table: 4.1 Socio-demographic Information of the participants.

Details	**Frequency (n=108)**	**Percent (%)**
Age		
18-23 years	29	26.9
24-29 years	57	52.8
30-35 years	13	12
36-48 years	9	8.3
Gender		
Male	100	92.6
Female	8	7.4
Education		
Primary	1	0.9
SSC	1	0.9
HSC	22	20.4
Honor's	70	64.8
Masters	14	13.0
Residential area		
Urban	102	94.4
Rural	6	5.5
Training event		
Single event	39	36.11
Double event	35	32.40
Triple event	22	20.37
Four events	12	11.11
Training duration		
$\leq$ 1 year	38	35.2
2 year- 4 years	14	12.9
> 4 years	6	5.6
No training/ untrained	50	46.3

Table No. 4.1 shows that, among 108 participants, 52.8% (n = 57) were injured during sports events, whose age range is 24-29 years, which is the maximum. 26.9% (n = 29) participants were injured during sports events whose age range is 18–23 years; 12% (n = 13) participants were injured whose age range is 30-35 years; and 8.3% (n = 9) participants were injured whose age range is 36–48 years old. Most of the 90.3% (n = 100) were male participants who were injured during the sport, and 9.70% (n = 8) were female participants. Most of the time, males are injured more often than females. Most of the 64.8% (n = 70) participants participated in different types of sports events and continued their studies up to honors. 0.9% (n = 1) were studied up to primary, 0.9% (n = 1) participants were studied up to SSC, 20.4% (n = 22) participants were studied up to HSC, and 13% (n = 14) participants were studied up to masters. Players are participating in different sports clubs for playing games, which is why 94% (n = 102) were living in urban areas and 5.5% (n = 6) were living in rural areas. 36.11% (n = 39) of players were injured by a single event, 32.40% (n = 35) by a double event, 20.37% (n = 22) by a triple event, and 11.11% (n = 12) by a four-event. From the training event, we see that 35.2% (n = 38) received training within 1 year or less than 1 year from the nearest club, 12.9% (n = 14) within 2–4 years, 5.6% (n = 6) took training for more than 4 years, and 46.3% (n = 50) didn’t take any training.

Table: 4.2 Health Related Information of Players

Details	Frequency (n=108)	Percent (%)
Weight		
Underweight	8	7.4
Normal weight	87	80.6
Overweight	12	11.1
Obesity	1	0.9
Height		
1.498 meters (4 feet 11 inches) to 1.651 meters (5 feet 5 inches)	48	44.4
1.676 meter (5 feet 6 inches) to 1.778 meter (5 feet 10 inches)	60	55.5
Heartrate		
< 72	42	38.8
> 73	66	61.1
Posture		
Lordosis	2	1.9
Scoliosis	1	0.9
Kyphosis	0	0
Normal Posture	105	97.2
Eating disorder		
Yes	2	1.9
No	106	98

The analysis shows that from Table 4.2, 55.5% (n = 60) have a 1. 676-meter (5 feet 6 inches) to 1.778-meter (5 feet 10 inches) height range, and 44.4% (n = 48) have a 1.498-meter (4 feet 11 inches) to 1.651-meter (5 feet 5 inches) height range. Of the all participants, 7.4% (n = 8) were underweighted, 80.6% (n = 87) were normal weight, and this is the highest range of the participants; 11.1% (n = 12) were overweight, and 0.9% (n = 1) were obese. So, it was found that 42% (n = 42) had a heart rate of 72 and 66% (n = 66) had a heart rate of >73. In the body posture segment, 1.9% (n = 2) of participants have lordosis, 0.9% (n = 1) have scoliosis, and 97.2% (n = 105) have normal posture. Most of

them (98% (n = 106) participants) don't have eating disorders; 1.9% (n = 2) have eating disorders and suffer from sports injuries.

Table: 4.3 Injury-related Information of Players

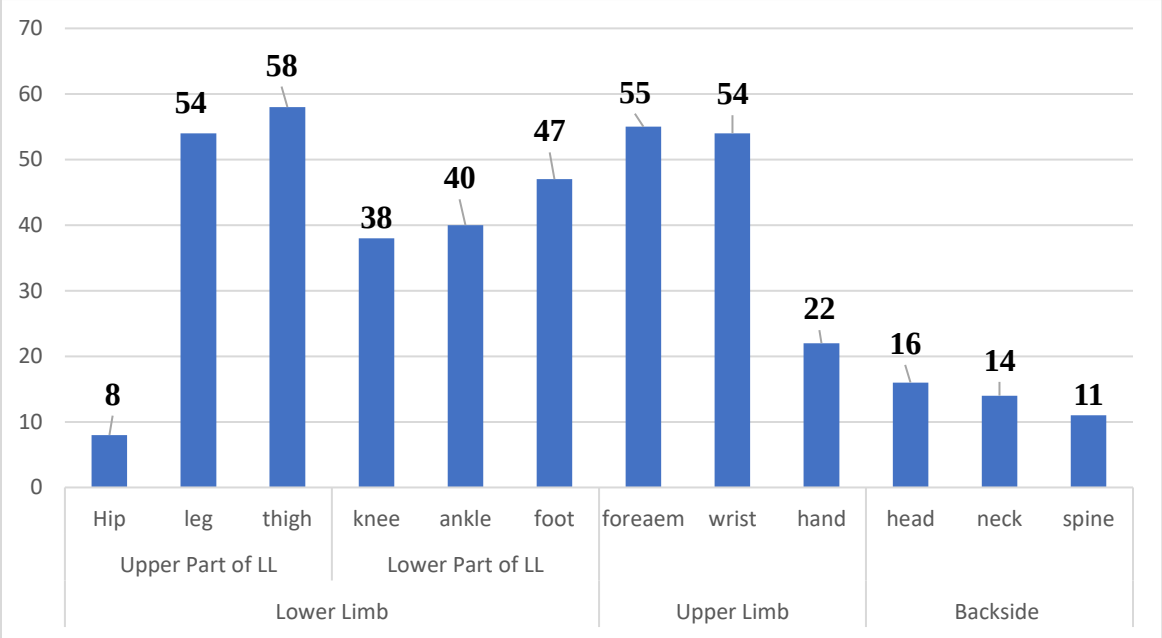
Details	Frequency (n=108)	Percent (%)
Name of the injury		
Head and neck injury	24	22.2
Rotator cuff injury	35	32.4
Tennis Elbow	58	53.7
Wrist Injury	52	48.1
Upper limb Fracture	4	3.7
Hip dislocation	3	2.8
Hamstring	56	51.9
Quadriceps Strain	15	13.9
Meniscus Injury	28	25.9
Anterior Cruciant	6	5.6
Tibial stress fracture	2	1.9
Ankle sprain	41	38
Toe fracture	32	29.6
Tendonachilis rapture	7	6.5
Plantar fasciitis	15	13.9
Types of injury		
Direct (Traumatic)	86	79.6
Indirect (Overuse)	22	20.4
Severity		
Mild	16	14.8
Moderate	80	74.1
Severe	12	11.1
Times of injury		
One	23	21.3
Two	41	38.0
Three	10	9.3
Four	34	31.5
Behavior of pain		
Sometimes	93	86
Always	15	14
Nature of Pain		
Mild	23	21.3
Moderate	63	58.3
Severe	15	13.9
Very severe	7	6.5
Time of pain		
Day	3	2.8
Night	54	50.0
During movement	50	46.3
Resting period	1	0.9

From Table No. 4.3, we see that 22.2% (n = 24) participants have a head and neck injury, 32.4% (n = 35) participants have a rotator cuff injury, 53.7% (n = 58) participants have tennis elbow, 48.1% (n = 52) participants have a wrist injury, 3.7% (n = 4) participants have an upper limb fracture, 2.8% (n = 3) participants had a hip dislocation, 51.9% (n = 56) have a hamstring strain, 13.9% (n = 15) have a quadriceps strain, 25.9% (n = 28) have a meniscus injury, 5.6% (n = 6) have an anterior cruciate injury, 1.9% (n = 2) have a tibial stress fracture, 38% (n = 41) have an ankle sprain, 29.6% (n = 32) have a toe fracture, 6.5% (n = 7) have tendonachilis rapture, and 13.9% (n = 15) have plantar facititis.

The study also discovered from this table 4.3 that among 108 participants, 80% (n = 86) were injured by direct injury when participating in sports, and 20% (n = 22) were injured by indirect injury during sports activity. During a sporting event, 15% (n=16) of participants sustained mild injuries, 74% (n=80) sustained moderate injuries, and 11% (n=12) sustained severe injuries. From this table 3, we see that 21.3% (n = 23) participants were injured one time, 38% (n = 41) participants were injured two times, 9.3% (n = 10) participants were injured three times, and 31.5% (n = 34) participants were injured four times. We also see that most of them were injured two times, and we can see that 86% (n = 93) have pain sometimes and 14% (n = 15) have pain always after the injury. The Visual Analogue Scale (VAS) is a self-reported measure consisting simply of a 10-centimeter line with a statement at each end representing one extreme of the dimension being measured (most often intensity of pain). The respondent gives their indication with a pen mark on the line corresponding to their answer. We see 21.3% (n = 23) have mild pain from the injury, 58.3% (n = 63) have moderate pain from the injury, 13.9% (n = 15) have severe pain from the injury, 6.5% (n = 7) have very severe pain from the injury, and we see 2.8% (n = 3)

have pain in the day, 50% (n = 54) have pain in the night, 46.3% (n = 50) have pain during movement, and 0.9% (n = 1) have pain in resting period. There is a maximum number of participants who feel pain at night.

Figure: 01 Injury as body pattern



From this Figure 1, the study show that in the lower limb, 7.4% (n = 8) participants were injured in the hip, 50% (n = 54) participants were injured in the leg, and 53.7% (n = 58) participants were injured in the thigh. In the upper limb, 50.9% (n = 55) participants were injured in the forearm, 50% (n = 54) participants were injured in the wrist, and 20.4% (n = 22) participants were injured in the hand. In the lower limb, 35.2% (n = 38) participants were injured in the knee, 37% (n = 40) participants were injured in the ankle, and 43.5% (n = 47) participants were injured in the foot. In the upper back, 14.8% (n = 16) participants were injured in the head, 13% (n = 14) participants were injured in the neck, and 10.2% (n = 11) were injured in the spine.

Table: 4.4 Occupational status of the injured participant

Details	Frequency (n=108)	Percent (%)
Occupational Role		
self-care	69	63.9
Productivity	30	27.8
Leisure	9	8.3
Basic Self-care		
Bathing	17	15.7
Dressing	74	68.5
Grooming	5	4.6
Eating	12	11.1

According to table 4.4, 64% (n=69) have a problem with self-care, 28% (n=30) have a problem with productivity, and 8% (n=9) have a problem with leisure. And in Basic self-care, 15.7% (n = 17) are facing problems in bathing, 68.5% (n = 74) are facing problems in dressing, 4.6% (n = 5) are facing problems in grooming, and 11.1% (n = 12) are facing problems in eating because of a sports injury.

Table: 4.5 Injured participant's treatment-seeking behavior

Details	Frequency (n=108)	Percent (%)
Need to be hospitalized after injury		
Yes	11	10
No	97	90
Hospitalized for surgery		
Yes	4	96
No	104	4
Treatment		
Medication	89	82.4
Occupational therapy	14	13
Physiotherapy & other rehabilitation services		
Not applicable	5	4.6
Rehabilitation Protocol		
Yes	25	23
No	83	77

From Table 4.5, we see that for sports injuries, 90% (n = 97) weren't admitted to the hospital, and 10% (n = 11) needed to be hospitalized after the injury because they got severely injured. After the sports injury, we can see from the table that 4% (n = 4) needed surgery because they were severely injured during the sports; they faced many types of injuries in the upper and lower extremities; 96% (n = 104) didn't need surgery for sports injuries; and we can see that most of the participants (82.4% (n = 89)) took medicine as a treatment; 13% (n = 14) took occupational therapy, physiotherapy, and other rehabilitation services after getting injured; and 4.6% (n = 5) didn't take any treatment. After the injury from the sport, we see from Table No. 3 that 12.9% (n = 14) knew the rehabilitation protocol, and 87.3% (n = 94) didn't know the rehabilitation protocol after the injury among 108 participants.

CHAPTER- V DISCUSSION

The aim of this study was to determine the characteristics of sports injuries among adult players. More than three to four players get sports injuries at organized sports events. Which is a crucial public health concern for the nation (DeHaven & Lintner, 1986). Although it was realized that in this study the sample size was small. This study provides information about the characteristics of sports injuries among adult players, effectiveness of their daily lives after injury, and the pain from sports injuries in our country. A total of 108 participants were taken during this study period. The study population was made up of 90.3% males and 9.70% females. Here we show that most of the participants were male. Their age range was from 18 to 48 years, with a mean age of 52.8% of the participants being between 24 and 29 years. In another study of (DeHaven & Lintner, 1986) The minimum and maximum ages among the participants were 18 years and 48 years, respectively. The majority of the participants were aged between 24 and 29 years. Most of the participants were male adults. In this study, most of the participants lived in rural areas (94.4%), and most of them (64.8%) continued their studies with honors. As a result, players over the age of 18 are more likely to sustain an injury. The most common sport of injury was football, with more than 12 times the number of injuries seen in the next most common sport (DeHaven & Lintner, 1986). were cricket trainees. Most of them are injured by single events (39%), and double events (35%). From all participants, 22.2% (n = 24) were trained for 1 year, which is the highest, and 46.3% didn't take any training. From all participants, 42% had a heart rate less than 72, 66% had a heart rate greater than 73, and the majority of them were normal weight 80.6%, A study published in the Journal of Strength and

Conditioning Research the study found that the average weight of NFL players was 100.4 kg (221.3 lbs.) and the average body mass index (BMI) was 31.8 kg/m² (Hoffman et al., 2012). The study found 97.2% had normal posture. Another study examined the effects of prolonged full flexion on the lumbar spine, which is a common posture in many sports. The study found that prolonged full flexion of the lumbar spine can lead to creep deformation, which is a gradual and permanent deformation of the spine over time (McGill & Brown, 2008). Most of them 98% did not have an eating disorder. Eating disorders are especially common among players, and frequently in competition, players participating in activities that emphasize leanness for performance and appearance are at significantly greater risk.

Males also develop eating disorders but at a much-reduced incidence of approximately 90% female and 10% male (Bahr & Holme, 2003). In this study, we found that most common injury is 53.7% have tennis elbow and 32.4% have a rotator cuff injury. 22.2% have a head and neck injury; 0.9% have a shoulder dislocation; 48.1% have a wrist injury; 51.9% have a hamstring strain; However, a study published in 2017 in the Asian Journal of Medical and Biological Research reported on the pattern of sports injuries among athletes attending a tertiary hospital in Dhaka, Bangladesh (Khandaker et al., 2017). The study found that the most common types of sports injuries were fractures, followed by soft tissue injuries such as sprains, strains, tennis elbow and wrist injury. Other common injuries in adult players discussed include anterior cruciate ligament injuries, ankle sprains, and ankle fractures (Adirim & Cheng, 2003).

Most of them are injured in the lower limb; most of them were 53.7% were injured in the leg, In the upper limb, most of them 50.9% were injured in the forearm, n = 54 (50%) were injured in the wrist, according to a study published in the Journal of Athletic Training, the most commonly injured body part in sports-related injuries is the leg, followed by the knee and the ankle. The study analyzed data from collegiate athletes over a five-year period and found that ankle injuries accounted for approximately 15% of all injuries, while knee and lower leg injuries each accounted for around 10%. Other commonly injured body parts included the head and face, shoulder, and wrist/hand (Caine et al., 2009). In another study of (Hawkins & Fuller, 1999) the most commonly injured body parts were the lower limb (45.2%) and upper limb (31.1%). According to (Rettig & MD, 2017) The incidence of wrist problems in athletic activities is extremely high. For example, in gymnastics, the wrist and hand support the body's weight. Repetitive activities in which the wrist and hand have contact with a ball (such as handball and volleyball) or grip a racquet or an oar also result in a high number of overuse injuries. According to (Tanzir-Uz-Zaman, 2012), the most commonly injured joints in cricket are the shoulder and elbow, and most injuries occur during throwing. He mentioned that injuries to the elbow in cricket are not common. The wrist joint may be affected when a player falls to the ground while fielding the ball. Wicketkeepers are also prone to wrist injuries. Muscle strain is a common hip and thigh problem. It may be due to a lack of conditioning in the muscles

From this study, most of them (80%) were injured directly when participating in sports. One study published in the British Journal of Sports Medicine examined the incidence and patterns of direct and indirect injuries among elite players. The study found that direct injuries were more common than indirect injuries, with ankle and knee injuries being the

most frequent types of injuries (Waldén et al., 2011). Another study published in the Journal of Athletic Training examined the incidence and characteristics of direct and indirect injuries among high school athletes in various sports. these studies suggest that direct injuries are more common in sports with high levels of contact and physicality, while indirect injuries may be more common in sports that involve repetitive or high-impact movements (Knowles et al., 2006). and faced moderate injury 74% of participants suffered. Another study published in the American Journal of Sports Medicine that moderate injuries are a significant concern in various sports and can be caused by a range of risk factors. Identifying these factors and developing effective prevention and management strategies can help reduce the incidence and severity of moderate injuries in athletes (Orchard & Seward, 2002). And the major participant group gets injured: 38% get injured twice, and 86% have pain sometimes. From the VAS scale measurement, we find that 21.3% have mild pain, 58.3% have moderate pain, 13.9% have severe pain, and 6.5% have very severe pain. ne study published in the British Journal of Sports Medicine examined the prevalence and severity of pain in elite athletes. The study found that mild pain was common, with over 90% of athletes experiencing mild pain in the past year. Moderate pain was less common, with approximately 50% of athletes reporting moderate pain in the past year. Severe pain was less frequent, with only 15% of athletes reporting severe pain in the past year (Drew et al., 2016). Most of them (50%) have felt the pain at night, and 46.3% have felt the pain when moving. The sports ethic influenced participants at all levels of sport (casual, amateur, and professional). We suggest that once the sports ethic is internalized, it may counter the potential buffering capacity of injury prevention

programs. The implications of these findings for injury prevention education are assessed. (Jessiman-Perreault & Godley, 2016)

It also affects most of them; 64% (n = 69) have problems with self-care, which is why 68% (n=74) are affected by dressing. These injuries also cause problems in their daily lives. A study published in the Journal of Orthopedic & Sports Physical Therapy investigated the impact of sports injuries on ADLs in athletes (Emery et al., 2018). The study found that athletes with sports injuries had a significantly lower ability to perform ADLs compared to healthy controls. Additionally, the study found that athletes with lower extremity injuries had a more significant impact on ADLs than those with upper extremity injuries. Another study published in the Journal of Sports Sciences investigated the impact of sports injuries on ADLs in young athletes (Varni et al., 2014). The study found that sports injuries significantly affected the physical and psychosocial functioning of young athletes, including their ability to participate in ADLs.

Of these injuries, 90% weren't admitted to the hospital, and 10% were needed to be hospitalized. 4% required surgery and 23% were aware of the rehabilitation protocol following the injury. For treating the injury, 82.4% took medicine as a treatment, and 13% took occupational therapy, physiotherapy, and other rehabilitation services after getting injured. In another study found More than 775,000 adults, ages 18 and younger, are treated in hospital emergency rooms for sports-related injuries each year. Most of the injuries occurred as a result of falls, being struck by an object, collisions, and overexertion during unorganized or informal sports activities. Sports injury diagnosis, prevention, and treatment are the most important issues in sports medicine. (Rahim et al., 2019). However,

a study published in 2017 in the Asian Journal of Medical and Biological Research reported on the pattern of sports injuries among athletes attending a tertiary hospital in Dhaka, Bangladesh (Khandaker et al., 2017).

CHAPTER- VI CONCLUSION

6.1 Strength

The study has been provided with a baseline of information about the characteristics of sports injuries among adult players. The study is valid and approved by the Institutional Ethical Review Board of BHPI. All data was collected specifically. The study is time effective. In my occupational therapy background, this is the first research on sports injuries in Bangladesh. It is important to develop research-based evidence for occupational therapy practice. Occupational therapists' practice is evidence-based in all aspects of health care.

6.2 Limitation of the study

The study should be considered in light of the following limitations: Though the expected sample size was 384 for this study, due to resource constraints, the researcher could manage just 108 samples, which is very small to generalize the result for the wider population of sports players. Samples were selected by a purposive sampling procedure. There is little literature about the characteristics of sports injuries among adult players in Bangladesh, so it is difficult to compare the study with other research. The researcher was able to collect data only from nine selected sports clubs for a short period of time, which will affect the results of the study's ability to generalize to a wider population. In this study, the questionnaire was developed after searching sufficient literature.

6.3 Practice Implication

A recommendation evolves out of the context in which the study was conducted. The purpose of the study was to explore the characteristics of sports injury among adult players. Though the research has some limitations researcher identified some further steps that might be taken for the better accomplishment of further research. For the ensuring of the generalization of the research, it is recommended to investigate a large sample. In this study researcher only took some adult players from some club players & university students. So for further study researcher strongly recommended including all professional -non-professional sports players from all over Bangladesh. Due to the limitation of time, the investigator was not able to collect the data from some government organizations like Bangladesh Kriya Shiksha protistan, Abahoni, and Mohamedan. For this, it is strongly recommended that if any further study will be done in this area then a pilot study should be done to format the questionnaire. Besides this in this study the ratio of male and female participants was unequal. So it is recommended for further study to take the participants equally for comparison of gender and sports injuries. In this study investigator only identified the ratio of characteristics of sports injuries among adult players, so it is recommended further study to identify the prevalence of upper extremity injuries among sports players.

6.4 Conclusion

It is important to develop research-based evidence for occupational therapy practice in sports injuries. Occupational therapists' practice is evidence-based in all aspects of health care. There are few studies on sports and sports injuries in Bangladesh. This study cannot cover all aspects of this vast area. So, it is recommended that the next generation of occupational therapy members continue their study regarding this area; this may involve the use of large sample size and participants from different districts of Bangladesh. We may conduct research on other sports injuries and sports-related health problems such as dehydration, lack of nutrition, conditioning, etc., where occupational therapists can work. Like common tennis injuries, wrist injuries are common among players. The increasing trend of sports injuries among players is a public health concern in Bangladesh. This study found that more than one-third of the players had received sports injuries in the last year. Most of the injuries occurred to tennis elbow, wrist injury, hamstring strain injury, and as in the body, forearm, wrist, arm, leg, knee, ankle, foot, The majority of injuries are direct and cause mild pain. and the highest type of injury was reported as tennis elbow. In their treatment-seeking behavior, most of them visited a medical doctor, and 82.4% took treatment from a pharmacy. Knowledge of sports science and sports-related injuries among the players was also found to be poor. Further research is needed to explore the incidence of sports injuries among adult players.

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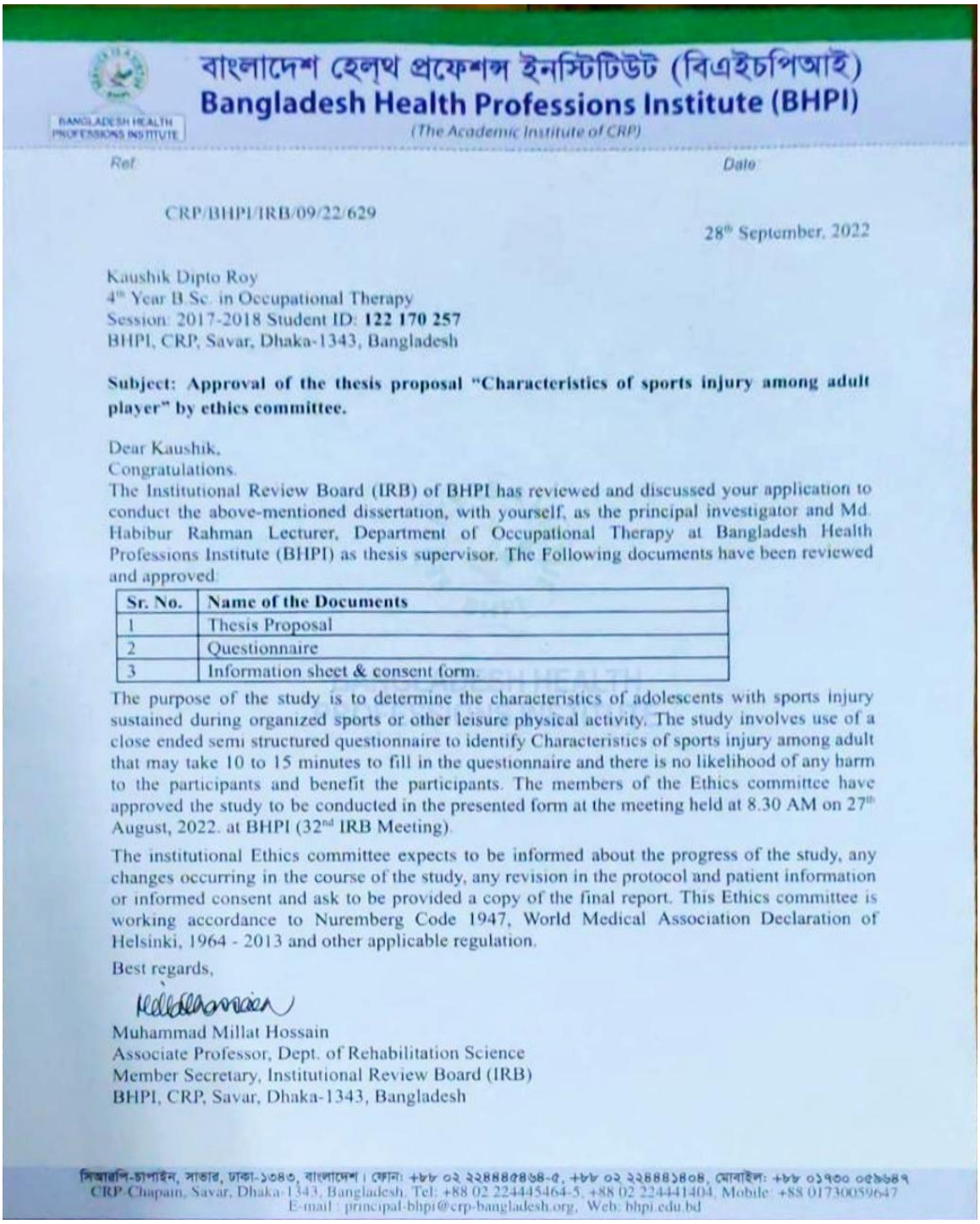
APPENDIX

Appendix: A Permission Letter from BHPI



বাংলাদেশ হেলথ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)

BANGLADESH HEALTH PROFESSIONS INSTITUTE

Ref: Date:

CRP/BHPI/IRB/09/22/629

28th September, 2022

Kaushik Dipto Roy
4th Year B.Sc. in Occupational Therapy
Session: 2017-2018 Student ID: **122 170 257**
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal "Characteristics of sports injury among adult player" by ethics committee.

Dear Kaushik,
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the principal investigator and Md. Habibur Rahman Lecturer, Department of Occupational Therapy at Bangladesh Health Professions Institute (BHPI) as thesis supervisor. The Following documents have been reviewed and approved:

Sr. No.	Name of the Documents
1	Thesis Proposal
2	Questionnaire
3	Information sheet & consent form.

The purpose of the study is to determine the characteristics of adolescents with sports injury sustained during organized sports or other leisure physical activity. The study involves use of a close ended semi structured questionnaire to identify Characteristics of sports injury among adult that may take 10 to 15 minutes to fill in the questionnaire and there is no likelihood of any harm to the participants and benefit the participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 8.30 AM on 27th August, 2022. at BHPI (32nd IRB Meeting).

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of 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,

Muhammad Millat Hossain
Associate Professor, Dept. of Rehabilitation Science
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ। ফোন: +৮৮ ০২ ২২৪৪৫৪৬৪-৫, +৮৮ ০২ ২২৪৪৪১৪০৪, মোবাইল: +৮৮ ০১৭৩০ ০৫৯৬৪৭
CRP-Chapain, Savar, Dhaka-1343, Bangladesh. Tel: +88 02 224445464-5, +88 02 224441404, Mobile: +88 01730059647
E-mail : principal-bhpi@crp-bangladesh.org, Web: bhpi.edu.bd

Permission letter from sports club

Date: 5th November, 2022

To

Head of Occupational Therapy Department

Department of Occupational Therapy

Centre for the Rehabilitation of the Paralysed (CRP)

CRP-Chapain, Savar, Dhaka-1343

Subject: Prayer for permission to collect data for the research project.

Sir,

With due respect to state that, I am a student of 4th year B. Sc. (Honours) in Occupational Therapy of Bangladesh Health Professions Institute (BHPI). In 4th year, I have to submit a research project to the University of Dhaka in partial fulfillment of recruitmentsof the degree of Bachelor of Science in Occupational Therapy. The area of my research is sports injury settings and my research titleis **"Characteristics of sports injury among adult player"**. As it isQuantitative research, I would like to take the interview of participants of **sports injury**who have suffer from their injury to doing their daily activities form different sports club in the city of Dhaka. As like AIUB sports club, clemon math sports club, Sarwar badminton club, Radio colony sport club and BHPI sport club.

So, I therefore, pray and hope that you would be kind enough to grant me permission for collecting data for my study and oblige thereby.

I remain

Sir,

Kaushik Dipto Roy

4th year B. Sc. (Honours) in Occupational Therapy, BHPI

Attachment: Proposal of Research

Comments and Signature of Head of the department

06/11/2022

Sk. Moniruzzaman

The Head of the Department

Dept. of Occupational Therapy

Bangladesh Health Professions Institute, CRP, Savar, Dhaka

DUET Sports Club Gazipur, Dhaka

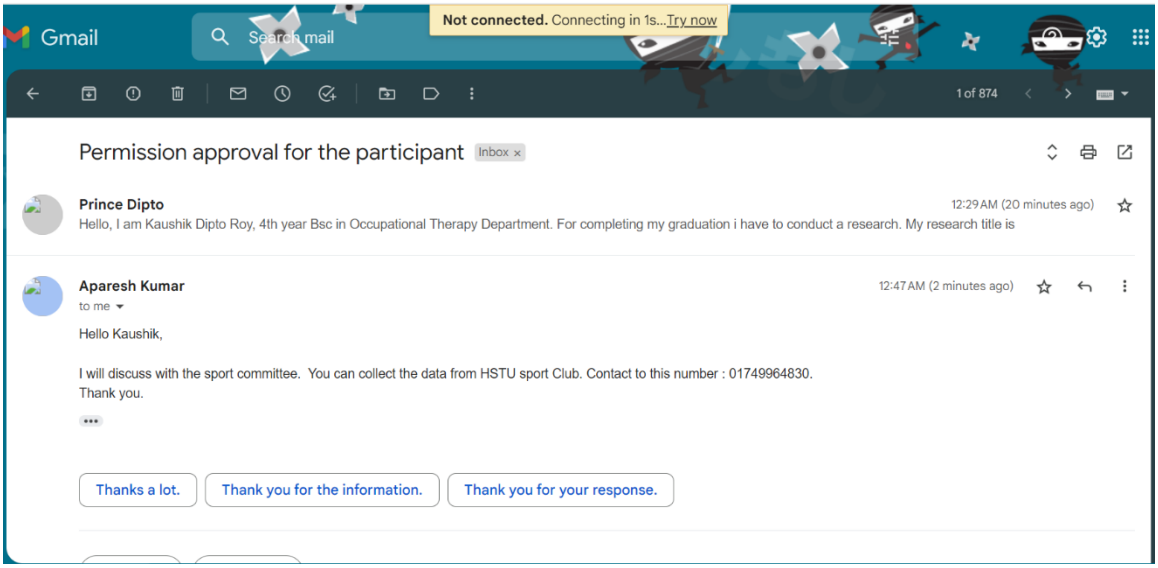
AIUB Sports Club Dhaka

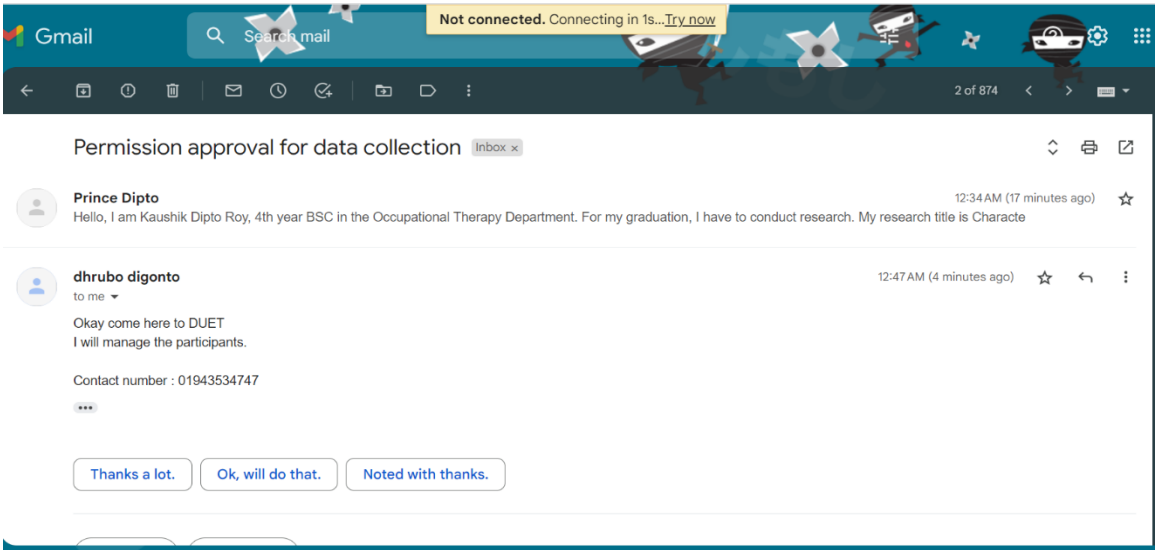
HSTU Sports Club Dinajpur

Clemonmath Sports Club Khamarbari, Dhaka

Permission Granted

Permission letter from HSTU and DUET sports club





Appendix: B Consent Form and Information Sheet

BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)

Department of Occupational Therapy

CRP-Chapain, Savar, Dhaka-1343, Tel: 02-7745464-5, 7741404, Fax: 02-7745069

Consent form

(Please read out to the participant)

Assalamualaikum. I am Kaushik Dipto Roy, 4th Year B.Sc. in Occupational Therapy student, Bangladesh Health Professions Institute (BHPI), affiliated to the University of Dhaka. To fulfil the requirement of B.Sc in Occupational therapy degree I have to do a research project. My research title is "Characteristics of sports injury among adult player" The purpose of this research is to find out to determine To identify the characteristics of adults with sports injury sustained during organized sports. This will take approximately 20 - 25 minutes.

I am committed that the study will not harmful or risk for you. There is no payment for taking part in the study. All information provided by you will be treated as confidential and in the event of any report or publication, it will be ensured that the source of information remains confidential. Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want during the interview.

If you have any queries about the study, you may contact with myself Kaushik Dipto Roy or my supervisor Md. Habibur Rahman (Lecturer, Department of Occupational Therapy).

So, may I have your consent to proceed with the interview?

YES ☐

NO ☐

Signature & Date of Participant

…….

Signature & Date of Researcher

……..

BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)
Department of Occupational Therapy
CRP-Chapain, Savar, Dhaka-1343, Tel: 02-7745464-5, 7741404, Fax: 02-7745069

সম্মতিপ্ত্র

আসসালামুআলাইকুম, আমি কৌশিক দীপ্ত রায়, চতুর্থ বর্ষের বি, এস, সি, ইন অকুপেশনাল থেরাপি ডিপাট্মেন্ট এর ছাত্র, বাংলাদেশ হেলথ প্রফেশনালস ইনস্টিটিউট (বিএইচপিআই), ঢাকা বিশ্ববিদ্যালয়ের অধিভুক্ত। অকুপেশনাল থেরাপি ডিগ্রীতে B.Sc প্রয়োজনীয়তা পূরণের জন্য আমাকে একটি গবেষণা প্রকল্প করতে হবে। আমার গবেষণার শিরোনাম হল "প্রাপ্তবয়স্ক খেলোয়াড়ের মধ্যে ক্রীড়া আঘাতের বৈশিষ্ট্য" এই গবেষণার উদ্দেশ্যটি সংগঠিত ক্রীড়া বা অন্যান্য অবসর শারীরিক ক্রিয়াকলাপের সময় স্থায়ী ক্রীড়া আঘাতের বৈশিষ্ট্যগুলি সনাক্ত করার জন্য নির্ধারণ করা। এটি পূরণ করতে প্রায় ২০-২৫ মিনিট সময় নেবে।

আমি প্রতিশ্রুতিবদ্ধ যে গবেষণাটি আপনার জন্য ক্ষতিকারক বা ঝুঁকি নেবে না। অধ্যয়নে অংশ নেওয়ার জন্য কোনও অর্থ প্রদান করা হয় না। আপনার দ্বারা প্রদত্ত সমস্ত তথ্য গোপনীয় হিসাবে বিবেচিত হবে এবং কোনও প্রতিবেদন বা প্রকাশনার ক্ষেত্রে, এটি নিশ্চিত করা হবে যে তথ্যের উত্স গোপনীয় থাকে। এই গবেষণায় আপনার অংশগ্রহণ স্বেচ্ছাসেবী এবং আপনি কোনও নেতিবাচক ফলাফল ছাড়াই এই অধ্যয়নের সময় যে কোনও সময় নিজেকে প্রত্যাহার করতে পারেন। আপনার এমন কোনও নির্দিষ্ট প্রশ্নের উত্তর না দেওয়ার অধিকারও রয়েছে যা আপনি সাক্ষাত্কারের সময় পছন্দ করেন না বা চান না।

আপনার যদি অধ্যয়ন সম্পর্কে কোনও প্রশ্ন থাকে তবে আপনি আমার সাথে যোগাযোগ করতে পারেন কৌশিক দীপ্ত রায় বা আমার সুপারভাইজার মোঃ হাবিবুর রহমান (প্রভাষক, অকুপেশনাল থেরাপি বিভাগ)।

সুতরাং, আমি কি সাক্ষাত্কারের সাথে এগিয়ে যাওয়ার জন্য আপনার সম্মতি পেতে পারি?

হ্যাঁ ☐ না ☐

অংশগ্রহণকারীর স্বাক্ষর ও তারিখ গবেষকের স্বাক্ষর ও তারিখ

....

Appendix: C Questionaries (English version)

Id No:	
Name:	Address:
Mobile no:	

Questionaries

Sociodemographic Questions

Serial No	**Question**	**Answer**
1.	Age	**_____years**
2.	Gender	1. Male 2. female
3.	Training event	1. Cricket 2. Football 3. Archery 4. Running 5. High Jump 6. Long Jump 7. Swimming 8. Shooting 9. Gymnastic 10. Badminton 11. Hockey 12. Tennis 13. Table tennis 14. Basketball 15. Other (Specify)
4.	Duration of training	1. Less than 1year 2. 1year 3. 2year 4. 3year 5. 4year 6. more than 4 years **7.** Other (Specify)=
5.	Education	1. Primary 2. Secondary School Certificate (SSC) 3. Higher Secondary Certificate (HSC) 4. Honor's 5. Masters
6.	Residential area	1. Urban 2. Rural

Health Related Questions

7.	Height	_____meter
8.	Weight	
	BMI(According to WHO) Underweight= <18.5 Normal weight= 18.5-24.9 Over weight =25-29.9 Obesity= 30 or greater	1. Underweight 2. Normal weight 3. Over weight **4.** Obesity
9.	Heartrate	_____ beat/min
10.	Posture(Palm line scale)	1. Lordosis 2. Kyphosis 3. Scoliosis **4.** Normal curvature
11.	Presence of eating disorder	1. Yes **2.** No

Health injury related question

12.	Name/Types of Injury	1. Head & Neck injury 2. Rotator cuff injury 3. Tennis elbow 4. Wrist injury 5. Fracture of upper limb 6. Hip dislocation 7. Hamstring strain 8. Quadriceps strain 9. Meniscus injury 10. Anterior crutiate ligament injury 11. Posterior crutiate ligament injury 12. Stress fracture of tibia 13. Fracture of lower limb 14. Ankle sprain 15. Great toe and/or other finger fracture 16. Tendonachilis rupture 17. Planter fasciitis
13.	Pattern of sports injury as a body part	Have you ever got injury in hip /leg/thigh? (1) Yes (2) No Have you ever got injury in forearm/wrist/hand? (1)Yes (2) No Have you ever got injury in knee/ankle/foot?

		(1) Yes (2) No Have you ever got injury in head, neck and spine? (1)Yes (2) No
14.	Types of Injury	1. Direct(Traumatic) **2.** Indirect(Overuse)
15.	Severity of injury	1. Mild 2. Moderate **3.** Severe
16.	How many times have you got injured	(1) One (2) Two (3) Three (4) More than three
17.	Nature of pain (According to VAS scale)	**0 1 2 3 4 5 6 7 8 9 10**
18.	What is the behavior of pain?	a=Intermittent b=constant
19.	When do you notice the pain?	a= Day b= Night c= during movement d= during rest
20.	How the injury affects your role	a) self-care b) productivity c) leisure
21.	In what areas is the injury hampering you in your daily life?	1. Bathing 2. Dressing 3. Grooming 4. Eating
22.	Did you need to hospitalized?	(1) Yes (2) No
23.	Did you need any surgery?	(1) Yes (2) No
24.	Do you know what rehabilitation protocol is?	(1) Yes (2) No
25.	What type of treatment you have taken?	a) Medication b) Physiotherapy c) Occupational therapy d)Not applicable

Questionaries (Bangla version)

<table>
<tr><td>১/ বয়স_____ বছর</td><td>২/ লিঙ্গ ঃ ১) পুরুষ
২)মহিলা</td></tr>
<tr><td colspan="2">৩/ প্রশিক্ষণরত খেলা (ইভেন্টটি আন্ডারলাইন করুন)
আর যে খেলায় আহত হওয়ার সম্ভাবনা বেশি। (এর পাশে টিক চিহ্ন)
1. ক্রিকেট 2. ফুটবল 3. তীরন্দাজি 4. চলমান 5. হাই জাম্প 6. লং জাম্প 7. সাঁতার 8. শুটিং 9. জিমন্যাস্টিক 10. টেনিস 11. হকি 12. টেনিস 13. টেবিল টেনিস 14. বাস্কেটবল 15. অন্যান্য (নির্দিষ্ট করুন)</td><td>৪/ প্রশিক্ষণের সময়কাল
1) ১ বছর এর কম
2) ১ বছর
3) ২ বছর
4) ৩ বছর
5) ৪ বছর
6) ৪ বছর এর অধিক
7)অন্যান্য (নির্দিষ্ট করুন) _____</td></tr>
<tr><td>৫/ আপনার শিক্ষাগত যোগ্যতা ?
• প্রাথমিক
• মাধ্যমিক স্কুল সার্টিফিকেট (এসএসসি)
• উচ্চ মাধ্যমিক সার্টিফিকেট (এইচএসসি)
• অনার্স
• মাষ্টার্স</td><td>৬/ আপনার আবাসিক এলাকা ?
1) শহুরে
২) গ্রামীণ</td></tr>
</table>

সাস্থ্য সম্প্রর্কিত তথ্য

<table>
<tr><td>১/ উচ্চতা _____ মিটার</td><td>২/ হৃদস্পন্দন _____ বীট/মিনিট</td></tr>
<tr><td>৩/ ওজন _____kg

(18.5 এর নিচে - আপনি কম ওজনের সীমার মধ্যে আছেন
18.5 এবং 24.9 এর মধ্যে - আপনি স্বাস্থ্যকর ওজনের সীমার মধ্যে আছেন
25 এবং 29.9 এর মধ্যে - আপনি অতিরিক্ত ওজনের সীমার মধ্যে আছেন
30 এবং 39.9 এর মধ্যে - আপনি স্থূলসীমার মধ্যে আছেন)
১) আন্ডারওয়েট ২) স্বাভাবিক ওজন</td><td>৪/ পোসচার বা ভঙ্গি
১)লর্ডোসিস ২) কাইফোসিস
৩)স্কোলিওসিস ৪) স্বাভাবিক বক্রতা</td></tr>
</table>

৩) অতিরিক্ত ওজন ৪) স্থূলতা	
৫/ খাওয়ার অরুচী বা খাওয়াজনিত কোন সমস্যা? ক) হ্যাঁ (খ) না	৬/ আঘাতের নাম/ধরন 1. মাথা ও ঘাড়ের আঘাত 2. রোটেটার কাফ আঘাত 3. কাঁধ স্থানচ্যুতি 4. হাতের কনুই 5. কব্জিতে আঘাত 6. উপরের অঙ্গের ফ্র্যাকচার 7. হিপ স্থানচ্যুতি 8. হ্যামস্ট্রিং স্ট্রেন 9. কোয়াড্রিসেপ্স স্ট্রেন 10. মেনিসকাস আঘাত
৭/ শরীরের কোন অংশে খেলার সময় বেশি আঘাত পেয়েছেন? ১) আপনি কি কখনো আঘাত পেয়েছেন? হিপ: (1) হ্যাঁ (2) না · লেগ :(1) হ্যাঁ (2) না · থাই বা উরু: (1) হ্যাঁ (2) না ২) আপনি কি কখনো ইনজুরিতে পড়েছেন? · অগ্রভাগ: (1) হ্যাঁ (2) না · কব্জি: (1) হ্যাঁ (2) না · হাত: (1) হ্যাঁ (2) না	11. এন্টেরিয়র ক্রসিয়েন্ট লিগামেন্টের আঘাত 12. পোষ্টেরিয়র ক্রসিয়েন্ট লিগামেন্টের আঘাত 13. টিবিয়ার স্ট্রেস ফ্র্যাকচার 14. নিম্ন অঙ্গ ফ্র্যাকচার 15. গোড়ালি মচকে যাওয়া 16. পায়ের আঙ্গুল এবং / অথবা অন্যান্য আঙ্গুলের ফ্র্যাকচার 17. টেন্ডোনাচিলিস রাপচার 18. প্লান্টার ফ্যাসিটিসিস 19. অন্যান্য
৩) আপনি কি কখনো ইনজুরিতে পড়েছেন? হাঁটু: (1) হ্যাঁ (2) না · গোড়ালি: (1) হ্যাঁ (2) না · ফুট :(1) হ্যাঁ (2) না ৪) আপনি কি কখনো ইনজুরিতে পড়েছেন? · মাথা: (1) হ্যাঁ (2) না ঘাড়: (1) হ্যাঁ (2) না · মেরুদণ্ড: (1) হ্যাঁ (2) না	৮/ আপনার আঘাতের ধরন কি? 1. সরাসরি 2. পরোক্ষ (অত্যধিক ব্যবহার) ৯/ আপনার আঘাতের তীব্রতা কেমন ছিল? 1) মৃদু 2) মাঝারি 3) গুরুতর
১০/ আপনি কতবার আঘাত পেয়েছেন? ১)এক ২)দুই ৩) তিন ৪)তিনবারের বেশি	১১/ আপনার ব্যথার ধরন কি ছিল? 1. মাঝে মাঝে 2. সবসময় ব্যাথা হতে থাকে

১২/ আপনার ব্যথার প্রকৃতি কি ধরনের(VAS স্কেল অনুযায়ী)

০	১	২	৩	৪	৫	৬	৭	৮	৯	১০
কোন ব্যাথা নেই		অল্প ব্যাথা		মোটামুটি ব্যাথা		বেশি ব্যাথা		অনেক বেশি ব্যাথা		অসহনীয় ব্যাথা

১৩/ কোন সময় আপনি ব্যথা লক্ষ্য করেন? ১) দিন ২) রাত ৩) নড়াচড়া বা চলাচল ৪) বিশ্রামের সময়	১৪/ আঘাত কীভাবে দৈনন্দিন জীবনে আপনার ভূমিকাকে প্রভাবিত করে? ১) স্ব-যত্ন (নিজের যত্ন নেয়া বা নিজের কাজ) ২) উৎপাদনশীলতা (পেশাগত কাজের সময়) ৩) অবসর
১৫/ প্রাপ্ত আঘাত দৈন্দিন জীবনে আপনার কোন ক্ষেত্রে বাধাগ্রস্থ করছে ? ১. গোসল ২. ড্রেসিং ৩. সাজসজ্জা ৪. খাওয়া	১৬/ কিভাবে আঘাত আপনার জন্য একটি বাধার সৃষ্টি করে? _____
১৭/ ইনজুরির সময় আপনার কি হাসপাতালে ভর্তি হয়েছিলেন ? 1) হ্যাঁ 2) না	১৮/ ইনজুরির পর আপনার কি কোনো সার্জারির দরকার ছিল বা হয়েছিল? 1) হ্যাঁ 2) না
১৯/ ইনজুরির পর আপনি কি রিহ্যাব বা পুনর্বাসন প্রোটোকল সন্মন্ধে জানতে পেরেছেন কিনা? 1) হ্যাঁ 2) না	২০/ ইনজুরির পর আপনি কি ধরনের চিকিৎসাসেবা নিয়েছেন? ১) ওষুধ 2) ফিজিওথেরাপি 3) অকুপেশনাল থেরাপি ৪) প্রযোজ্য নয়