PREVALENCE OF ANKLE SPRAIN AND IT'S ASSOCIATED FACTORS AMONG THE YOUNG MALE TRAINEES AT BANGLADESH KRIRA SIKKHA PROTISTHAN

Kamruzzaman

Bachelor of Science in Physiotherapy (B.Sc. PT)

DU Roll No: 911

Registration No: 1714

Session: 2011-2012

BHPI, CRP, Savar, Dhaka.

Bangladesh Health Professions Institute (BHPI)

Department of physiotherapy

CRP, Savar, Dhaka-1343

Bangladesh

August' 2016

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-

Prevalence of Ankle Sprain and it's associated factors among the Young Male Trainees at Bangladesh Krira Sikkha Protisthan

Submitted by **Kamruzzaman,** for the partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (B.Sc. PT).

…….
Mohammad Habibur Rahaman
Assistant Professor,
Department of Physiotherapy
BHPI, CRP, Savar, Dhaka.
Supervisor

…….
Mohammad Anwar Hossain
Associate Professor & Head
Department of Physiotherapy
CRP, Savar, Dhaka

…….
Ehsanur Rahman
Assistant Professor
Department of Physiotherapy
BHPI, CRP, Savar, Dhaka

……..
Md. Shofiqul Islam
Assistant Professor
Department of Physiotherapy
BHPI, CRP, Savar, Dhaka

……..
Md. Obaidul Haque
Associate Professor & Head
Department of Physiotherapy
BHPI, CRP, Savar, Dhaka

Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own**.** I also declare that for any publication, presentation or dissemination of information of the study, I would be bound to take written consent from Department of Physiotherapy, Bangladesh Health Professions Institute (BHPI).

Signature: **Date:**

Kamruzzaman

Bachelor of Science in Physiotherapy (B.Sc. PT)

DU Roll No: 911

Registration No: 1714

Session: 2010-2011

BHPI, CRP, Savar, Dhaka - 1343

Bangladesh

CONTENTS

Page No.

Page No.

Acknowledgement

First of all, I would like to pay my gratitude to ALLAH who has given me the ability to complete this project in time with success. The second acknowledgement must go to my family members who have always inspired me for preparing the project properly.

I am extremely grateful to my honorable and praiseworthy supervisor **Mohammad Habibur Rahaman**, Assistant Professor, BHPI, CRP, Savar, Dhaka for giving me his valuable time, his supervision and excellent guidance without which I could not able to complete this project.

I would like to express my gratitude to my honorable teacher **Md. Obaidul Haque**, Associate Professor and Head of the Physiotherapy Department, CRP, Chapain, Savar, Dhaka for providing me permission for data collection.

I would like to express gratitude to my honorable teachers **Md. Sohrab Hossain,** Associate Professor of Physiotherapy, BHPI & Head of Programs CRP and **Mohammad Anwar Hossain**, Associate Professor of Physiotherapy, BHPI & Head of the Department of Physiotherapy, CRP and **Ehsanur Rahman,** Assistant Professor Department of Physiotherapy, BHPI and all of my teachers for helping me in this study. I would also like to give my special appreciation to my respected teacher **Md. Shofiqul Islam**, Assistant Professor of Physiotherapy, BHPI for his proficient guidance to carry out this study. My special thanks to all the staffs of Exercise Physiology Department of BKSP. I am grateful to **Md. Bakhtiar**, Senior Researcher & Head of the Department of Exercise Physiology, BKSP, Savar, Dhaka and other Clinical Physiotherapist, for their excellent accumulation throughout of this study.

I like to thanks my friends Myeen, Pangkag, Tasmia Osman, Rana, Nuruzzaman, Sabuj, khairul for help me to complete this project. I would like to thank the Librarian of Bangladesh Health Professions Institute (BHPI) and her associates for their kind support to find out related books, journals and also access to internet. Finally I would like to thank to all participants of the study for their enormous co-operation.

Acronyms

ATFL:	Anterior Talofibular Ligament
BHPI :	Bangladesh Health Professions Institute
BKSP :	Bangladesh Krira Sikkha Protisthan
BMI :	Body Mass Index
BMRC:	Bangladesh Medical Reseach Council
CAI :	Chronic Ankle Instability
CFL :	Calcanaeo Fibular Ligament
IRB :	Institutional Review Board
NCAA:	National Collegiate Athletic Association
PTFL :	Posterior Talofibular Ligamemt
SPSS :	Statistical Package for the Social Sciences
WHO:	World Health Organization

List of Figures

Page No

List of tables

Page No

Abstract

Purpose: To find out the prevalence of ankle sprain and it's associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan. *Objective:* To identify the prevalence of ankle sprain and it's associated factors among the young male trainees, to expose the injured participants age, training duration and sporting event and type of injury and severity of injury and to ascertain the treatment after injury. *Methodology:* A quantitative cross-sectional study design was selected to achieve the objectives of the study. 50 subjects were selected through convenience sampling technique from the injured young male trainees trained at BKSP. By using a close ended questionnaire to collect data. *Results:* The result of the study demonstrated that the peak age group was 16 or more than 16 years (81.8% in total subject).The most frequent sports injury was general athletics 36.40% (n=8) and lowest was gymnastic 4.5% (n=1). In my I found the less injury rate who trained 2 year 4.5% (n=1) and most injury rate who trained 4 and 5 years 22.70% (n=5). Most of the participants had normal posture 77.30% (n=17) but kyphotic posture was 13.6% (n=3). The end result also indicated most commonly associated injury was fifth metatarsal 27.7% (n=5). I found the prevalence of type of injury higher rate was direct injury 72.70% (n=16) and overuse injury 27.30% (n=6) and 68.20% (n=15) participant's had severe pain. Among the participants 97.2 % (n=35) were normal weight. Among the participant 100% regularly attend in warm up and cool down activity and the duration of warm up and cool down 81.80% (n=18) in more than 16 min. The finding also reflects that the treatment was consisting physiotherapy as frequent as drug (40.90 % n=9 taken physiotherapy, 9.10% n=2 taken drug and 50% n=11 taken both). *Conclusion:* The vulnerable age range is over 16 or more than 16 were frequent injury occurring among athletes and noticeably direct are the key issues to cause of injury. Health education and perform regular physical activity along with physio therapeutic exercises can prevent injury.

Keywords: Prevalence, Ankle Sprain, Associated Factor, Young Male Trainees, BKSP.

CHAPTER: I INTRODUCTION

1.1 Background

Most of the sports ankle sprain is greatest common type of ankle injury. In sports injuries overall the countries imposing, second maximum common injured body site was the ankle and the most common description of ankle injury was ankle twist (Fong et al., 2007).

In competitive sports and military training lateral ankle sprains show from extreme ankle plantar flexion and inversion motions and frequent occur. These injuries control to pain, joint instability, flat symptoms, and time omitted may be violence unit readiness (Croy et al., 2013). Lateral ankle sprain occur extreme stretching or tearing of the anterior talofibular ligament (ATFL) and/or calcaneofibular ligament, mutually subsequent talocrural or subtalar joint laxity (Hubbard et al., 2007).

By male and adolescent athletes and ankle grudge accounted for in a superior way than 10% of bodily sports injuries, everywhere 80% or more were ligamentous tear injuries, sports injuries are equivalent to goods, homeland and occupational accidents in the joining in to an accident and emergency department and are greater generally continuous (Fong et al., 2008).

Lateral ankle sprain injury is the most common single type of acute sport trauma and over the years, various preventive strategies have been implemented, however, a recent epidemiology revealed that ankle sprain injury still dominated in sport injury, as it accounted for 14% of all attendance in an accident and emergency department (Fong et al., 2008). The growing orthopaedic biomechanics techniques have enhanced a better understanding of injury mechanism, and the subsequent research in sports injury prevention and management it's find in the recent decade (Chan et al., 2008).

To symbolize its national pride sports plays a vegorous role for a nation. Outstanding performance in international tournaments sports athletes are internationally recognized (Merlino & Perisa, 2012). The most common single type of acute sport trauma and over the years is lateral ankle sprain and a recent epidemiology revealed that ankle sprain injury still dominated in sport injury, which is accounted for 14% of all attendance in an accident

and emergency department, also shown that various preventive strategies have been implemented (Fong et al., 2008).

Recurrent ankle sprains boot keep to functional instability and departure of healthy ankle kinematics and proprioception, may be verify in periodic injury, chronic instability, rapidly degenerative skeletal changes, and chronic pain. May outcomes of ankle sprain is inability to receive in sports (Lin et al., 2010).

Many evidence suggests that previous injuries or limited joint flexibility may contribute to ankle sprains. Ankle ligamentous injury being the most frequent type of sprain and the mechanism of injury is when the foot is in an inverted position connected with plantar flexion that can be usually does damage to the lateral complex of the ankle (Morrison et al., 2007).

Most of the country are participating in sports nowadays for personal interest, relaxation, health and fitness training of people and after all, most common causes of injuries is sports which is comparable to traffic accidents, home and leisure accidents occupational injuries, and violence that sports injuries result in pain, loss of playing or working time, as well as medical expenditure which severe injuries may result in bone fractures, functional instability, limited mobility, disability, permanent cease of sports participation, psychological problem, and perhaps death (Fong et al., 2007).

In sport can occur in varying degrees of debilitation of ankle sprain, including decreased performance, absence from competition and adverse psychological effects and following an acute ankle sprain, pain, swelling and ecchymosis are common, that may contribute to reduced mobility and function, as well as occupational absence and the incidence of continuing symptoms following acute ankle sprain is variable, but has been reported with rates of between 40 and 50 %. (Doherty et al., 2013).

Later ankle injury, there is taste for the handle of sensible support and non-steroidal anti-inflammatory drugs and physical therapy within one area lead to positive swiftly term end which made a long story short the throw of the dice of infrequent ankle sprains and take care of be skilled in managing inherent ankle instability (Lin et al., 2010).

Several therapeutic interventions clinicians are doing to pick up ankle dorsiflexion such as stretching, manual treatment, electrotherapy, ultrasound, and exercises. However, the

intervention or aggregation of interventions that most effectively improves ankle dorsiflexion has not been established (Terada et al., 2013).

1.2 Rationale

Injury to the athletic trainees is common. Throughout the world, male athletes are in a large number as female and having more effort to training, practice and competition schedules. Male athletes play it very often and them suffering from different types of sports injury. Ankle sprain is the common injury in sports. Ankle sprain mostly occurs during jumping activity in sports. From the waterman study, most of the ankle sprain occurs by fall from stairs. Although some studies have deal with ankle sprain among male athletes in other countries, the exact nature and prevalence of this injury has not been studied before in Bangladesh. This study was formulated to fill the gap of knowledge in this area. The aims of the study were to find out the ankle sprain and it's associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan. According to Fong et al, the risk factors of ankle sprain is unable to do proper warm up and cool down before sports. Also risk factors are limb dominance, ankle joint laxity, anatomical alignment, muscle strength, muscle reaction time, and postural sway. From this study awareness was increased and may provide proper recommendation for every single risk which was helpful for players. Beside this it was help to established proper guideline and proper technique. This study was also help to discover the lacking area of male athletes especially about their posture before doing any activities and proper warm up and cool down activity before sports. Beside this it will be helpful to professional development which is mandatory for current situation. So physiotherapist can help them to teach and give proper education about the posture the condition and preventive methods. It will be helped to discover the role and importance of physiotherapy in every sector of BKSP.

According to (Manske & Robert, 2016), therapeutic management of athletes should begin before any injury occurs. Until now Bangladesh is behind addressing physiotherapy measures for male athletes in comparison to other countries. This study also will be helpful in making physiotherapist to aware about the musculoskeletal problem of male athletes and create an opportunity to work on sports background.

1.3 Research question

What is the prevalence of ankle sprain and it’s associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan?

1.4 Aim

To find out the prevalence of ankle sprain and it's associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan.

1.5 Objectives

1.5.1 General objective

To find out the prevalence of ankle sprain and it's associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan.

1.5.2 Specific objectives

1. To estimate the prevalence of ankle sprain among the male trainees at BKSP.
2. To expose the injured participant's age, training duration and sporting event.
3. To identify the types of injury.
4. To identify severity of injuries among male athletes.
5. To know about the management of injury (medication, physiotherapy or both).

1.6 Conceptual Frame Work

Independent variable **Dependent variable**

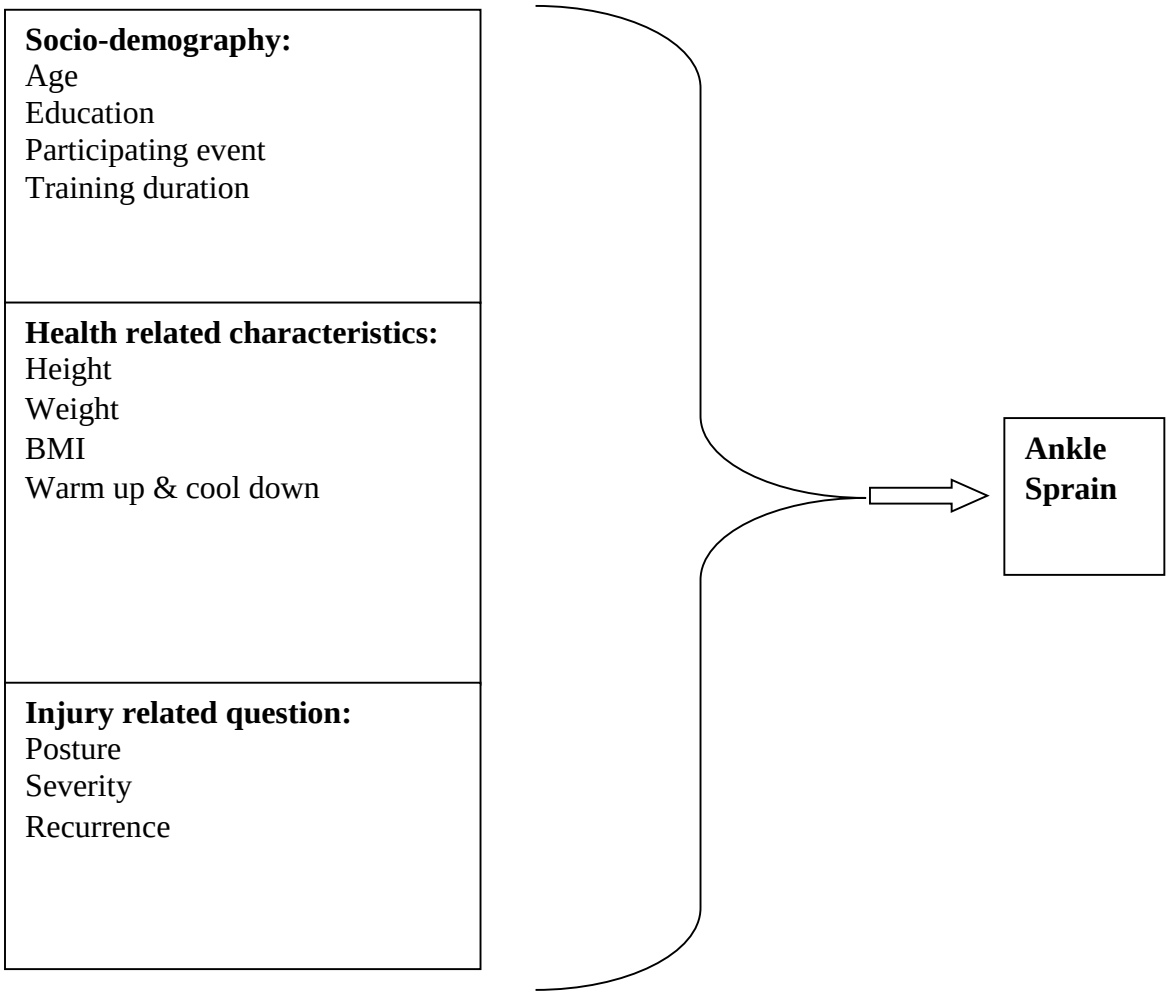


Table: List of variables

1.7 Operational definition

Prevalence

The degree to which something is prevalent, especially the percentage of a population that is affected with a particular disease at a given time.

Ankle sprain

An injury that occurs when the ankle rolls, twists, or turns in an awkward way. It is caused by the stretching of fibers or of the collagen of the ankle ligaments, whereby the fibers are partially or completely disrupted.

Young male trainees

A person trained to complete in sports or exercises involving physical strength, speed, endurance or a person who has natural aptitude for physical activities are athletes. Those who are young male participants involved in athletic activity are called as male trainees.

BKSP

Bangladesh Krira Shikkha Protisthan is an autonomous organization and its functions are directly under the ministry of youth and sports. Affairs of general direction and administration of the institute rest with 'The board of governors' headed by the ministry of youth and sports. The aim of the institute is to find out the promising sports talents among young boys and girls in the country to provide adequate facilities and opportunities for their intensive training on scientific lines along with scope of general education up to higher secondary level. Long time training programmed provided in the ten sports discipline namely football, basketball, boxing, cricket, gymnastics, hockey, shooting, swimming and tennis.

CHAPTER: II LITERATURE REVIEW

The approximately common injury to the ankle joitn is ankle tear, accounting for likely 2 million injuries for year. Every year incidence is estimated at 52.7 using 10,000 individuals. Ankle injuries are literally common in active individual and youngers, moment only to the knee in the annual trade activities may confirm in a someday higher incidence and risk for injury (Davenport et al., 2013).

In sports ankle sprains are such of the approximately common injuries and in a superior way frequently than generally other ankle injuries in occur nearly 7 times and the approximately often injured is the anterior talofibular ligament, followed all calcaneofibular ligament, 5000 ankle injuries using day are treated in the united kingdom, whereas in the america, greater than 25 000 ankle sprains occur per day is that estimated. 20% to 50% of those suffering an ankle injured is stay in Residual disability. After an ankle twist symptoms related to residual defect, one as inflammation, sadden, and exodus of motion may lead to increased service costs and time omitted from activity (Olmsted et al., 2005).

Ankle sprains explain 85% of generally told ankle injuries, and they show when the ligaments purchase the ankle bones in place tear or excessively overplay, ankle twist accounts for acceptable 40% of all athletic injuries and is most routinely seen in athletes contend football, cricket, tennis, hockey, basketball, rugby, continually which suitable 53% of basketball injuries and 29% of rugby injuries can be regarding ankle injuries and 12% of time gone in football is due to ankle injuries (Chan et al, 2011). Patients presenting by all of ankle sprains constitute 10% of emergency room visits in the United States by the whole of an incidence of 30,000 ankle sprains a day (Chan et al., 2011).

Some studies reported summary of injury epidemiology in two or more countries and thus made the total count 255. Most studies were conducted in Europe (45.5%), North America (30.2%) and Australasia (11.8%). Only an equal studies were from Asia (4.3%), South America (2.0%) and Africa (0.4%). Among countries, results showed that complete but no cigar studies were conducted in the Columbia (24.3%), followed at the edge of United Kingdom (13.3%), Australia (8.2%), Sweden (7.1%) and Denmark (6.3%) (Fong et al., 2007).

General sports were ready to be the worse for wear in eight countries as caught in. Knee was the actually popular wounded site (16.0-27.0%), followed nearby ankle (11.2-20.8%), by the whole of an arrangement that the hand was simply popular in Sweden (19.8%) and Holland (21.8%). For Holland, ankle ranked moment (20.8%) at afterwards the employee (21.8%). For Sweden, ankle ranked third (15.6%) after the employee (19.8%) and the knee (16.0%) Ankle injury description recommendation was available in three countries. Sprain was the truly popular humor of ankle injuries (33.0-73.0%), followed by abrasion (25.2%) and fracture (7.4-16.0%) (Fong et al., 2007).

On a balance board poor balance as measured and failure in hip abduction strength are associated by all of an increased risk of noncontact ankle sprains in valuable school athletes and such hundred sixty-nine high school athletes (101 male athletes, 68 female athletes) from football, men's basketball, men's rugby, women's gymnastics, women's basketball, and women's rugby were observed for 2 ages, in there were 20 noncontact inversion ankle sprains (McHugh et al., 2006).

Evaluated 160 inversion ankle injuries and issued a feeling of 71% and specificity of 33% in the diagnosis of ankle ligament tears when the bodiliy inspection was based on gathering of signs and symptoms, a abundantly known as the establishment of a hematoma, chance saddan, palpation, and the results of the ADT, mutually arthrography used as the gold standard (Croy et al., 2013).

Throughout the survival american football is one of the approximately popular sports, by the whole of more than 250 million players in 2000 and the practically common injuries in soccer are ankle inversion sprains and occur during plantar flexion and inversion of the foot that athletes who survive from ankle sprains are practically likely to reinjure the comparable ankle and the fancy incidence of ankle sprains in sports and their negative consequence for also sports participation regather for preventive measures (Mohammadi. 2007).

The maximum common injury mechanism is a combination of inversion and adduction of the foot in plantar flexion (supination) and this injury mechanism can cause damage to the lateral ankle ligaments and injury of the anterior talofibular ligament with intact medial ligaments leads to anterolateral rotary instability, in additional transection of the calcaneofibular ligament adds a tilting of the talus (Petersen et al., 2013).

The ankle joint is to what place the foot and the leg segments equal and it comprises of three profession articulations: the talocrural joint, the subtaler joint, and the distal tibiofibular syndesmosis that is besides termed the tibiotalar joint or the mortise joint, and is formed by the articulation of the center of talus, the tibial plafond, the medial malleolus and the lateral malleolus (Peterson et al., 2011).

This joint, in isolation, behaves rather appreciate a hinge joint that allows above all plantar flexion and dorsiflexion and the fibula extends besides to the lateral malleolus than the tibia does to the medial malleolus, by means of this creating a block to eversion. Such body feature especially allows larger range of inversion than eversion, by means of this, inversion sprains are preferably common than eversion ones (Fong et al., 2009).

The talocrural joint is met with by several dominant ligaments, namely the anterior talofibular ligament (ATFL), the calcanaeo-fibular ligament (CFL) and the posterior talofibular ligament (PTFL) at the lateral area, and the deltoid ligament in the medial angle of the ankle (Chan et al., 2011).

An ankle joint is formed by calcaneum, talus, cuboid, navicular, three cuniform and five metatarsal bones and anterior end is formed aside heads of the alternately, moment and third metatarsals, posterior end are formed every radial tubercle of the calcaeneum that ligaments are engased in articulation of an ankle joints and those ligaments are anterior talofibular ligament, posterior telofibular ligament, calcaneofibular ligament, talocalcaener ligament, calcaenocuboid ligament, cuiboidonavicular ligament, calcaenonavicular ligament, metatarsophalangeal ligament (Kaminski et al., 2013).

Ankle injury mainly materialize in lateral ankle sprain and there are mainly involve in lateral sided ligament of ankle which suited discrepancies are hinge on with use to certainly height, load, limb power structure, ankle joint laxity, anatomical alignment, muscle strength, muscle reaction predate, and postural influence are risk factors for ankle joint injury (McCriskin et al., 2015).

Risk factors are, a foot size by the whole of increased width, an increased ankle eversion to inversion enforcement, plantar flexion strength and pro portion between dorsi flexion and plantar flexion strength, and limb dominace could increased the risk of ankle injure (Chan et al., 2011).

The foot description, indication of ankle instability, and fancy general joint laxity are identified not to be risk factors and another broad literature rethink and declared a common consent that gender, general joint laxity and foot quality were not risk factors for ankle twist injury (Fong et al., 2009). The cavovarus deformity, increased foot width, and increased calcaneal eversion range of motion were on top of each other to the advantage of lateral ankle sprain injury (Morrison & Kaminski, 2007).

Therefore, foot positioning during touchdown was identified as etiology of ankle sprain injury and this also supported the suggestion that ankle taping or bracing corrected ankle joint positioning at landing rather than provided mechanical support to the ankle joint (Eils & Rosenbaum, 2006). Another etiology of ankle sprain injury is the delayed reaction time of the peroneal muscles at the lateral aspect of the ankle, an ankle sprain injury occurred in 40 milliseconds (ms), as the vertical ground reaction force peaked at about 40 ms when landing from a jump (Fong et al., 2009).

Approximately 30% of those who suffer a first-time ankle sprain develop chronic ankle instability. An athlete's sex, foot type, and generalized joint laxity may affect his or her risk of ankle injury. Limited ankle dorsiflexion in children may increase the risk of ankle injury (McKeon et al., 2008).

Recent epidemiological studies in high school athletes have found ankle sprains to be the most prevalent soccer injury among boys and girls (16% and 20%, respectively) and ankle ligament sprains were also the most common injury pattern in basketball, usually occurring from jumping and landing, being stepped on, and rotation around a planted foot (Chan et al., 2011).

In addition, ankle injuries have been reported to be a major cause of early development of osteoarthritis, recurrent injury, chronic instability and pain. Based on this information, ankle instability represents a major obstacle to the health and well-being of the physically active athletes (McKeon et al., 2008).

Ankle Sprain accounts for up to 40% of all athletic injuries and is most commonly seen in athletes participating in football, cricket, tennis, hockey, basketball, soccer and running and up to 53% of basketball injuries and 29% of soccer injuries can be attributed to ankle injuries and 12% of time lost in football is due to ankle injuries (Chan et al., 2011).

Ankle sprains are inserted the approximatel common injuries seen in athletic participation mutually reinjury value for athletes mutually lateral ankle sprains as fancy as 70% to 80%,dominant to the lifestyle of inherent ankle instability (CAI). Clinicians are faced mutually many factors that require to be addressed after lateral ankle sprains, including muscle weakness, postural-control deficits, decreased chain of movement, and the affect occurrence of re injury. With the direction of returning patients to fancy levels of work in a restrictive time fancy, clinicians are challenged to find. Approaches that will recover ankle power and intimidate re injury (Lin et al., 2010).

Patients presenting with ankle sprains comprise 10% of emergency room visits in the United States with an incidence of 30,000 ankle sprains a day (Chan et al., 2011).

During sport participation lateral ankle sprain has been documented to be the most common lower extremity injury sustained (Cumps et al., 2007). Almost 85% of all ankle sprains result from an inversion mechanism and damage to the lateral ligamentous complex of the ankle and injury to the lateral ligamentous complex at the ankle joint results in pain, swelling, and limited osteokinematics, after lateral ankle sprain which a loss of normal ankle dorsiflexion usually is observed at the talocrural joint (Hubbard & Hertel, 2006).

The amount of available ankle dorsiflexion plays a key role in the cause of lower extremity injuries (Backman & Danielson, 2011). Restriction of dorsiflexion may be a predisposition to re injury of the ankle and several future lower limb injuries, including plantar fasciopathy, lateral ankle sprains, iliotibial band syndrome, patellofemoral pain syndrome, patellar tendinopathy and medial tibial stress syndrome (Terada et al., 2013).

One of the most common and devastating injuries to the knees of basketball players is disruption of the ACL. For example, the National Collegiate Athletic Association (NCAA) surveyed collegiate athletes and found that the incidence of ACL injuries was 27 per 100,000 female athletes and 8 per 100,000 male athletes. Of these ACL injuries, 85.3% to 87.5% were caused by noncontact mechanisms, typically the result of improper landing or other such positioning activities (Agel et al., 2005).

Lateral ankle and mid foot injuries account for 80-85% of all sprains. The most common mechanism of injury for ankle sprains involves plantarflexion and inversion of the ankle and foot, which places excessive load on the anterior talofibular ligament. With failure of this ligament, secondary restrain to inversion occurs by way of the calcaneofibular and

posterior talofibular ligaments, placing them at similar risk for injury. Ankle sprains are assigned grades I to III, ordered from least severe to most severe ligament damage (Davenport et al., 2013).

Ankle ligament sprains are usually graded on the basis of severity.

Grade I (mild): is a mild stretching of the ligaments without macroscopic rupture or joint instability with mild tenderness, swelling, and stiffness and the ankle feels stable, and it is usually possible to walk with minimal pain. Grade II (moderate): is a partial rupture of the ligament with moderate pain and swelling, mild tenderness and stiffness and the ankle feels stable, and it is usually possible to walk with minimal pain. There are functional limitations and a slight to moderate instability. Typically, patients present with problems in weight bearing. Walking is painful. Grade III (severe) is a complete ligament rupture with marked pain, swelling, rising, hematoma and pain. In grade III injuries, there is a marked impairment of function with instability. Walking is usually not possible, because the ankle gives out and there is intense pain, although initial pain may quickly subside (Petersen et al., 2013).

Most common sign symptom of ankle sprains are: Mild tenderness, swelling, stiffness, pain, hematoma, Bruising, Walking difficulty, Initial pain may be quickly subside, Joint instability, Functional limitation (Fong et al., 2009).The severity of symptoms usually depends on how much tearing has occurred and in more severe sprains, you are often not able to walk or even put weight on your foot, and your ankle may feel unstable which one usually have extreme pain at first, but some people start to feel better fairly soon. You may also hear and/or feel a tearing sensation and a pop or a snap (McKeon et al., 2008). If a sprain does not heal correctly, your ankle joint may be more likely to be injured again or the pain may not go away and this often occurs with even a slight trauma, such as stepping off a curb or walking on uneven pavement (Petersen et al., 2013).

Garrick was one of the first to identify the most commonly injured structures in athletes is the lateral ligament of ankle and this finding support to subsequent reports. For lower extremity injuries and ankle-ligament sprains, retrospective and prospective studies have been performed to focus on the risk factors. Multiple variables can control by only prospective studies that evaluate in a population of athletes and are difficult to reliably obtain at risk for suffering an ankle injury (Beynnon et al., 2006).

For the establish prevention programs is important to identify risk factors associated with the injury occurrence, for the multifactorial etiology of injury is preferably using analysis accounting. Some, but not all, for lower ankle sprain include previous injury, poor flexibility, and decreased muscle strength or strength imbalances, older age intrinsic risk factors identified but different studies are contradictory from result. Associated consistently match play with an increased rate of ankle sprain is scarcely investigated of extrinsic risk factors (Hägglund et al., 2013).

About 85% of all ankle injuries are ankle sprains involving the lateral ankle ligaments. Chronic injuries are often related to, or are the sequellae of acute sprains, or overuse syndromes of the surrounding soft tissues. Intuitively, ankle sprains are most common in contact sports, indoor sports, and sports with high frequency of jumping (Engebretsen, 2010). Ankle sprain accounts for between 3 and 5 % of all Emergency Department visits in the UK, equating to approximately 5,600 incidences per day (Doherty et al., 2013).

Ankle sprains are often regarded as benign injuries that will resolve quickly with limited treatment many athletes sustain an ankle injury at some point in their athletic career and athletic tape is often applied to the ankle as a means to help prevent and treat ankle injury (i.e., sprains). Medical care for ankle injuries, both sport and non-sport related, cost 3.65 billion dollars annually (Osborne & Rizzo, 2003).

This includes acute, rehabilitative, and preventive care. The lower extremities are more susceptible to injuries and account for over 50% of all injuries in sport in the U.S. (Hootman & Agel, 2007), with ankle injuries accounting for the majority of these injuries (Fong et al., 2007).

From 144 separate papers they included One-hundred and eighty-one prospective epidemiology studies, 116 studies as high quality and 65 as low quality they considered. The major evaluations of the meta-analysis demonstrated a higher incidence of ankle sprain in females compared with males (13.6 vs 6.94 per 1,000 exposures), in children compared with adolescents (2.85 vs 1.94 per 1,000 exposures) and adolescents compared with adults (1.94 vs 0.72 per 1,000 exposures) (Doherty et al., 2013).

Ankle taping is part of science and part of art. Ankle taping of knowledge of the procedures and the art is perfected with practice. The science of ankle stabilizer (PAS) research is

based on the body prophylactic. A large body of literature is available on PAS research via meta-analysis empirical studies and reviews of literature (Cordova et al., 2005).

The ankle is a well known of the most consistently injured the motive of this systematic review is to evalujoint in sports. In various, lateral ankle sprains ate the clinical trials involving conventional exercise form 85% of generally ankle injuries. Despite con-interventions in FAI and oserve the changes inservative programmes to treat ankle sprains, multiple duced by the exercise treatments to the other patients materialize chronic ankle instability (CAI).The results of the disclose CAI can be classified on into technical and/or functional review might assist to verify optimal care instability. Mechanical instability is defined clear for FAI. As movement also the ankle's normal range of movement,and may be caused by ligament laxity (Klugl Martin., 2010).

Playing surface is the major controllable risk factor of ankle injuries (Villwock et al., 2009). Many studies from are not consistent as to whether natural grass or artificial turf poses a greater risk of injury and comparably new type of turf, Field Turf, is composed of a polyethylene fiber combination stabilized with a graded silica sand and cryogenically ground rubber infill to mimic the features of grass and provide an alternative, secure playing ground (Hershman et al., 2012). The program of football studied installed an indoor practice field in 2010 with Field Turf and this field for indoor practices and workouts is frequently utilizes (Estep, 2016).

Indoor/court sports of the sport category was the highest incidence of ankle sprain, with a cumulative incidence rate of 7 per 1,000 exposures or 1.37 per 1,000 athlete exposures and 4.9 per 1,000 h. when compared with high-quality studies then low-quality studies tended to underestimate the incidence of ankle sprain (Doherty et al., 2013).

Clinicians should control assessing dorsiflexion ROM in at-risk athletes. If dorsiflexion ROM is restrictive, clinicians should involve techniques to gain arthrokinematic and osteokinematic movement for usable prevention of ankle injury.

The association between wearing high heel shoes and the increased risk of ankle sprain suggests that the biomechanical demands on the ankle while wearing high heel shoes may place an individual at greater risk for injury. While have comprehensively described the changes in kinematics, kinetics, and muscle activation patterns associated with wearing

high heel shoes, these studies were limited with respect to understanding how wearing high heel shoes may contribute specifically to lateral ankle sprains (Foster et al., 2012).

Worldwide, almost one ankle sprain occurs per 10,000 person-days, and an estimated two million acute ankle sprains occur each year in the United States alone, resulting in an annual aggregate health-care cost of $2 billion and this injury can result in long-term disability in up to 60% of patients and considerable time lost to injury (Waterman et al., 2010).

In athletic populations ankle sprain is the most common injury, accounting for up to 30% of sports injuries, several studies have investigated the incidence of and risk factors for ankle sprain in athletic cohorts and other epidemiological studies have also described the incidence rates of ankle sprain in the general European population, active-duty military cadets and military service members (Waterman et al., 2010).

An athlete increases his or her risk of sustaining a recurrent ankle injury, after one ankle sprain and after insufficient rehabilitation can potentially lead to residual symptoms, recurrent instability, and possibly chronic ankle instability (CAI) an acute ankle sprain that was mobilized too quickly and most researchers use Freeman's definition as the minimally accepted criteria for chronic ankle instability: a history of at least one ankle sprain and the sensation of "giving way" on the same ankle (Tanen et al., 2013).

CHAPTER: III METHODOLOGY

3.1 Study design

This study to find out the ankle sprain and it's associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan. For this reason a quantitative research model in the form of a cross-sectional design was used. Cross-sectional study design is selected because in this way it is possible to identify a defined population at a particular point in time. Through the cross-sectional study results can be easily compared among those of different ages or ethnicity. In other hand Quantitative research method helps to used a large number of participants and therefore collecting the data objectively through this way data was reduced to numbers for statistical analysis in order to draw conclusion.

3.2 Study settings

As this is a survey of ankle sprain and it's associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan, so study site was at Bangladesh Krira Sikkha Protisthan, Savar, Dhaka. Samples was selected according to the inclusion criteria.

3.3 Population

Populations was the young male trainees of BKSP of this study. A population refers to the members of a clearly defined set or class of people, objects or events that were the focus of the investigation. The population shares a specific set of characteristics or criteria that have been established by the investigator. The criteria of study population were determined from a literature review and the goals for the study. Selection criteria was established gradually as the assumption and theoretical base of the study unfold.

3.4 Sample Size

The equation of sample size calculation are given below-

$$n = \left\{\frac{Z\left(1-\frac{\alpha}{2}\right)}{d}\right\}^2 \times pq$$

Here,

$Z\left(1-\frac{\alpha}{2}\right)$ = 1.96

P= 0.112 (Here P=Prevalence and P=11.2 %)

q= 1-p

=1-0.112

=0.888

d= 0.05

According to this equation the sample should be more than 152 people but due to lack of accessibility and time the study was conducted with 50 male athletes by convenience sampling.

3.5 Sampling procedure

Fifty samples was selected from the population for this study. Sample should represent the population as closely as possible. For survey research, it is better to get as many subjects as possible with the consideration of the size of the ideal population. Sometimes the sample size may be big and sometimes it may be small, depending on the population and the characteristics of the study. There is no easy way of establishing the best size of sample since this decision depends very largely on the research which is being undertaken as well as on the investigator's knowledge of the relevant population's characteristics. Samples was selected by convenience sampling procedure, because the male athletes remain in various tournaments on national and international level throughout the year and in convenience sampling participants are chosen who can be studied most easily, cheaply, quickly and who was willing to participate in this study.

3.6 Inclusion criteria

1. Only male players are selected (Willems et al., 2005)
2. 13 to 19 age group are selected (Tanen et al., 2014)
3. People who were regularly playing in BKSP (Willems et al., 2005)
4. People who were willing to participate in the study (Willems et al., 2005)

3.7. Exclusion criteria

1. Male athletes those who were not injured. (Willems et al., 2005)
2. Athletes who were not willing to participants. (Willems et al., 2005)

3.8 Data collection

Data collection is one of the most crucial parts of research. For this study data collection includes- method of data collection, materials used for data collection, duration and procedure of data collection.

3.9 Method of data collection

Data was collected by using a close ended structured questionnaire. Questionnaire was used because questionnaire is still a very popular and very useful technique of data collection within the health care area. Additionally the aim of the study was to identify the ankle sprain and it's associated factors among young male trainees of BKSP. So, it was easier to identify these problems by using questionnaires than any other methods. The strength of structured questionnaire is the ability to collect unambiguous and easy to count answer, leading to quantitative data for analysis. So, structured questionnaire is the most suitable way for data collection.

3.10 Materials used for the research project

Consent form, questionnaire, pencil and eraser, page, SPSS (Statistical Package for the Social Sciences) software to analyze data, Harvard Referencing 2012, computer.

3.11 Questionnaire

For data collection Bangla questionnaire was used. The samples of the study were the young male trainees of BKSP. The questions of the questionnaire was closed ended questions, which was set up sequentially. In the questionnaire there were 18 questions. The questionnaire is set in such a pattern that is available in the field data. Thus it is try to collect various information about the injuries of the male athletes and to find out and fulfill the objectives of the study. These questions includes: age, the injuries, training event, duration of training, type of injuries, severity of the injuries and type of treatment taken.

3.12 Duration of data collection:

Data was collected within 4 weeks and the duration was September 20, 2016 to October 15, 2016. Data was collected carefully and maintain the confidentiality of the data. Each participant provided particular time to collect data. In general, each questionnaire took approximately 10-15 minutes to complete.

3.13 Procedure of data collection

Though there was several ways of collecting data, it was easy and reliable if the questionnaire completed or filled up in the presence of the researcher (Bailey, 1997). Subjects were chosen under convenience sampling procedure and the data was taken from the previous documents and filled up the questionnaire form by the researcher. In the questionnaire participant's socio-demographic information including age, level of education, training age, health and history including their injury were asked. Data collection was one of the most crucial parts of research. For this study data collection includes- method of data collection, materials used for data collection and duration.

3.14 Data analysis

The result of this survey was consist of quantitative data. The collected data was illustrated with bar graphs. By this survey a lot of information was collected. All these results was gave a basic idea about the ankle sprain and it's associated factors among the young male trainees at BKSP. The results was calculated in percentages and descriptive statistics was presented. Data analysis is the process of systematically arranging and presenting information in order to search for ideas. The aim of the data analysis is to find out the meaning of the collected information. The study using descriptive statistics. Generally descriptive statistics are often uses in conjunction with survey methods. However the three most commonly used form of descriptive are: Measure of central tendency and Measure of dispersion, bar graph, histogram, pie chart and frequency polygon. Bar graphs are typically used to present nominal and ordinal data. It presents data in a series of vertical rectangle, with each rectangle representing the number of scores in a particular category.

3.15 Ethical consideration

The proposal was submitted to the Institutional Review Board (IRB) of Bangladesh Health Professions Institute and after the defense the research proposal approval was obtained from IRB. A written or verbral consent taken from participate before collecting of data. The World Health Organization (WHO) and Bangladesh Medical Research Council BMRC guidline were always followed to conduct study. For conducting this research, ethics committee have checked the proposal and allowed to carry out the research project.

The formal permission was taken from the head of the physiotherapy department and the researcher met with the trainee duly obtained proper permission from the Director of BKSP. Data collection was started and complete within the allocated time frame. All the data was review in strict secure and maintained confidentiality. The appraisal files were strictly secured and it was not open in front others without researcher.

1. All the participants and authority were informed about the purpose of the study, the process of the study and their written consent was obtained.
2. All the interviews were taken in a confidential way to maximize the participant's comfort and feelings of security.
3. The researcher has permission from the research supervisor, physiotherapy Department.
4. The researcher is to ensuring the confidentiality of participants' information, sharing information only with the research supervisor.

Before conducting research with the respondents, it is necessary to gain consent from the subjects. For this study interested subjects were given consent forms and the purpose of the research and consent forms were explained to the subject verbally. They were told that participation is fully voluntary and they have the right to withdraw at any time. They were also told that confidentiality was maintained. Information might be published in any presentations or writing but they were not being identified. They would not be embarrassed by the study. At any time the researcher was available to answer any additional questions in regard to the study.

CHAPTER: IV RESULTS

The purpose of the study was to find out the prevalence of ankle sprain among the young male athletes and to achieve this goal the result need to calculate and analyze in a systematic way and the result or analyzed data represent by bar graph and pie charts.

Prevalence of Ankle sprain

The pie chart shows that among 50 participant's, 44% (n=22) was affected by ankle sprain injury and other 56% (n=28) was affected by other injuries.

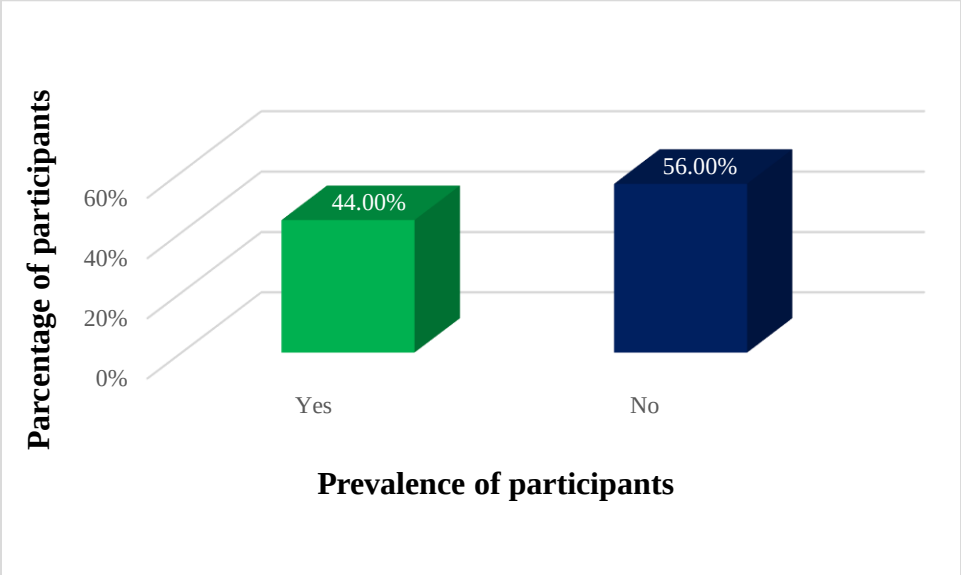


Figure 1: Prevalence of ankle sprain

4.1 Socio-demographic Information

4.1.1 Age

The bar graph shows, among the injured participants, highest number of injured participants 36.40% (n=8) were found in the age of 18, 17 years 31.80% (n=7), in 15 years 9.1% (n=2), in 19 years 9.10% (n=2) and 4.50% (n=1) injured at the age of 13, 14 and 16 years (Figure 2).

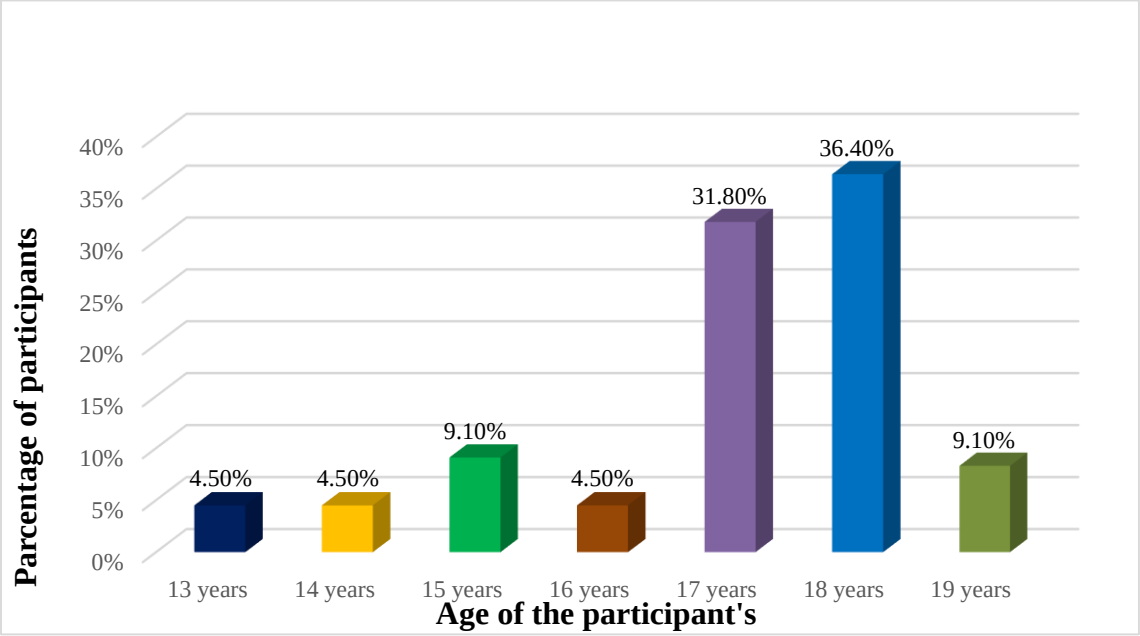


Figure 2: Age of the participants

Association between age of the participants and Ankle sprain

Table 1: Association between age of the participants and ankle sprain

Variable	Chi square value	P value
Age of the participants	3.763	0.709

This analysis shows association between age of the participants is not significant ($p<0.05$) associated with Ankle sprain.

4.1.2 Educational level

The bar graph shows, higher rate of injured athletes 72.70% (n=16) educational background is in the secondary school certificate, 18.20% (n=4) were in level of junior school certificate, 4.50% (n=1) in the higher secondary level, 4.50% (n=1) injured trainees undergoes primary school certificate level at Bangladesh Krira Shikkha Protisthan (Figure 3).

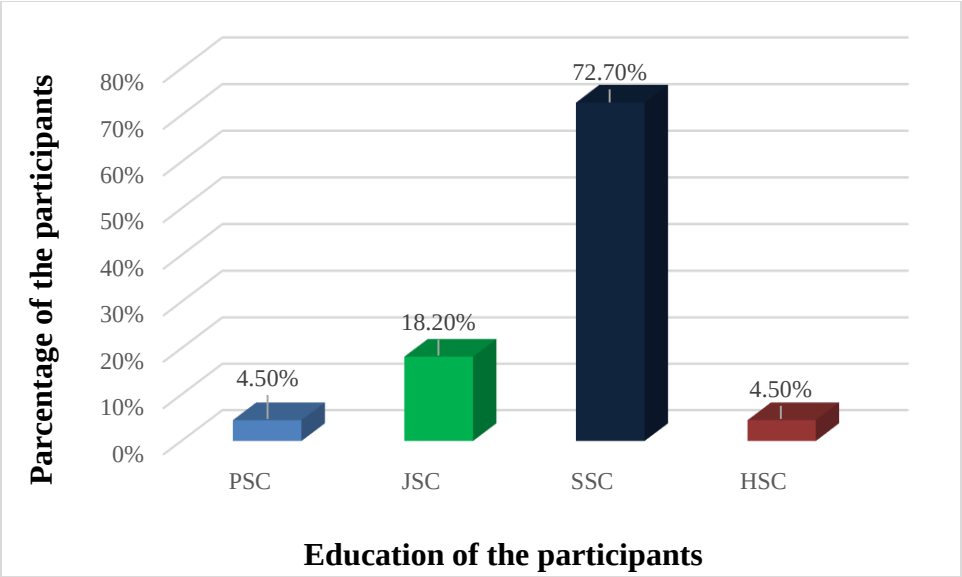


Figure 3: Educational level

Association between educational level and ankle sprain

Table 2: Association between educational level and ankle sprain

Variable	Chi square value	P value
Educational level	5.720	0.126

This analysis shows association between educational level is not significant ($p<0.05$) associated with Ankle sprain.

4.1.3 Training event

The bar graph shows that the highest number of injured participants 36.40% (n=8) are athletic trainees, in football 22.70% (n=5), cricket and hockey equal percent 9.10% (n=2) of injured trainee, in basketball 9.10% (n=2) and 4.50% (n=1) percent injured trainee are in gymnastic. (Figure 4).

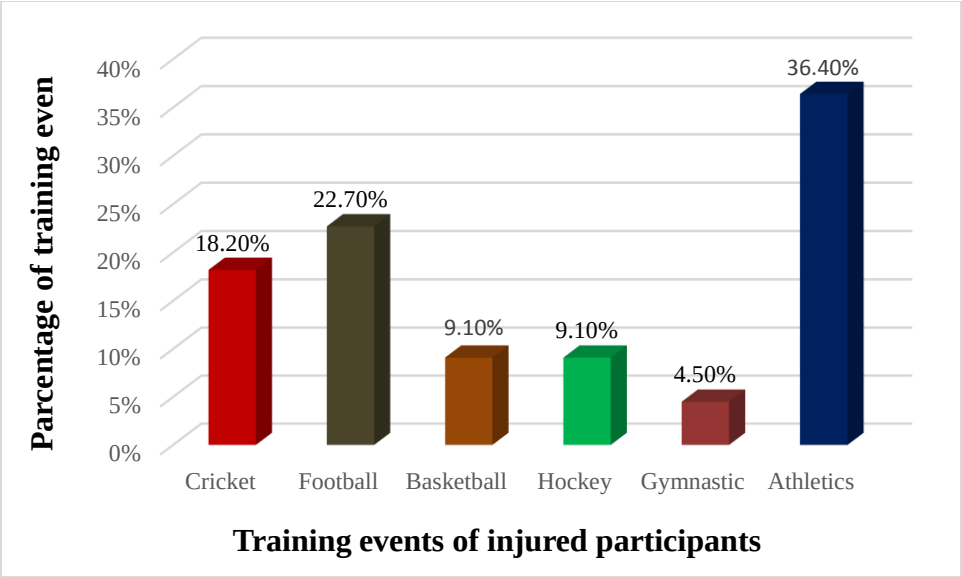


Figure 4: Training events of injured participants

Association between training events of participants and ankle sprain

Table 3: Association between training events of the participants and ankle sprain

Variable	Chi square value	P value
Training events	5.808	0.669

This analysis shows association between training events of participants is not significant ($p<0.05$) associated with Ankle sprain.

4.1.4 Duration of activity of participants

Among the injured participant's, in the bar graph injured participants undergo 3 years 18.20% (n=4), 4 years 22.70% (n=5), 5 years 22.70% (n=5), 1 year 18.20% (n=4), 2 years 4.5% (n=1) and 6 years 13.60% (n=3) (Figure 5).

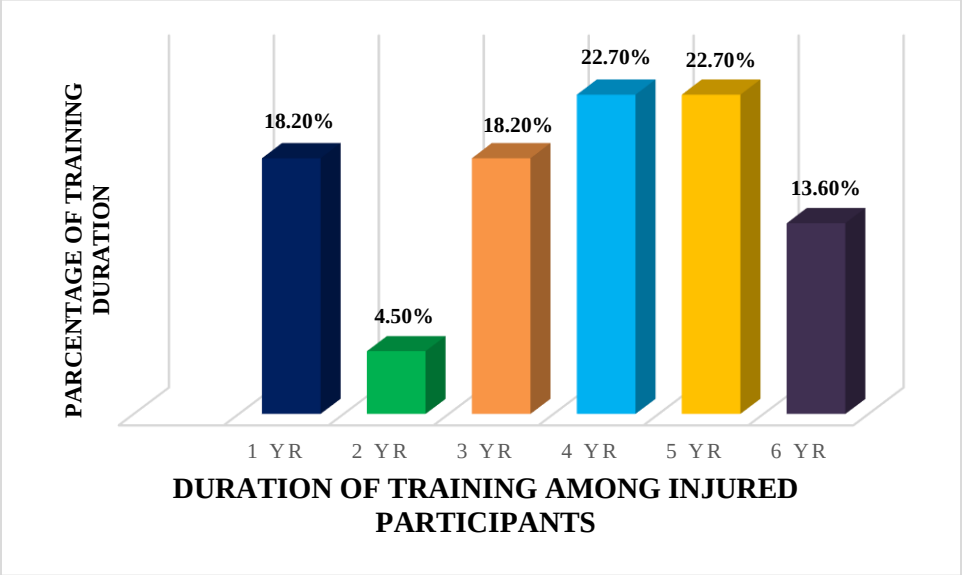


Figure 5: Duration of training among injured participants

Association between duration of training among injured participants and ankle sprain

Table 4: Association between associated ankle injury and ankle sprain

Variable	Chi square value	P value
Duration of training	15.611	0.016

This analysis shows association between duration of training among injured participants is significant ($p<0.05$) associated with Ankle sprain.

4.2 Health related characteristic of the participants

4.2.1 Posture of participants

Under the observation it was found that there were 4.5% (n=1) lordotic, kyphotic 13.60% (n=3), scoliotic 4.5% (n=1) and normal curvature 77.30% (n=17) (Figure 6).

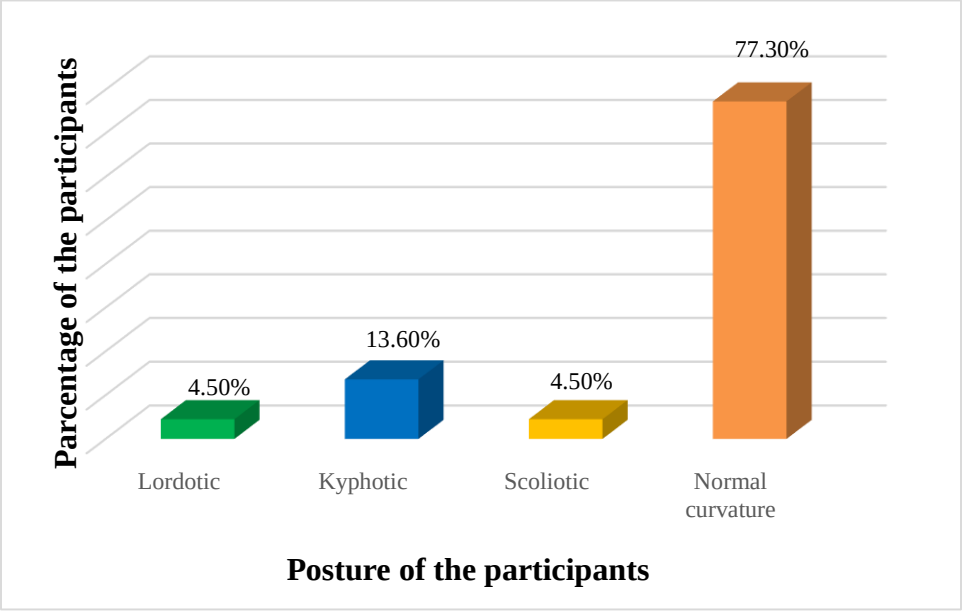


Figure 6: Posture of injured participants

Association between posture of the participants and ankle sprain

Table 5: Association between associated ankle injury and ankle sprain

Variable	Chi square value	P value
Posture of the participants	5.422	0.143

This analysis shows association between posture of the participants is not significant ($p<0.05$) associated with Ankle sprain.

4.3 Injury related information

4.3.1 Associated ankle injury of the participants

Among all participant's higher number 54.50% (n=12) participants has no associated ankle injury but 4.50% (n=1) great toe and /or other finger injury, 22.7% (n=5) fifth metatarsal fracture and 18.20% (n=4) calcaneus fracture (Figure 7).

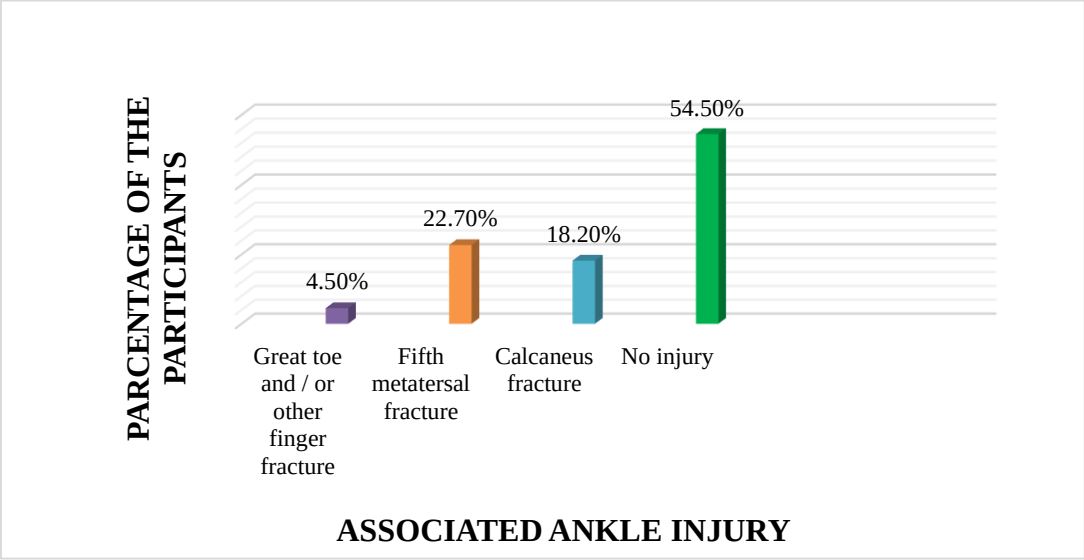


Figure 7: Associated ankle injury of the participants

Association between associated ankle injury and ankle sprain

Table 6: Association between associated ankle injury and ankle sprain

Variable	Chi square value	P value
Associated ankle injury	15.909	0.001

This analysis shows association between associated ankle injury is highly significant ($p<0.05$) associated with Ankle sprain.

4.3.2 Type of Injury of the participants

Participants of Bangladesh Krira Shikkha Protisthan were most commonly affected by direct injury 72.70% (n=16), and others were affected by overuse injury 27.30% (n=6) (Figure 8).

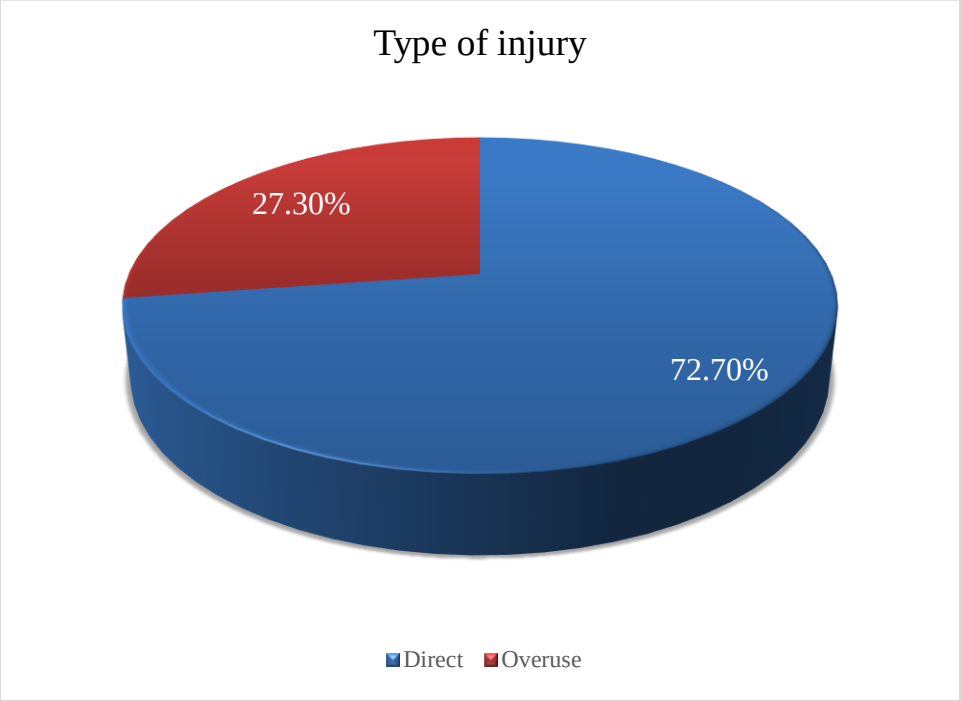


Figure 8: Type of injury

Association between type of this injury and ankle sprain

Table 7: Association between type of this injury and ankle sprain

Variable	Chi square value	P value
Type of injury	50.000	0.00

This analysis shows association between type of this injury is highly significant ($p<0.05$) associated with Ankle sprain.

4.3.3 Severity of injury of the participants

The pie chart shows, highest number of participant's 68.20% (n=15) were severe injured, 27.30% (n=6) moderate injured and 4.50% (n=1) mild injured (Figure 9).

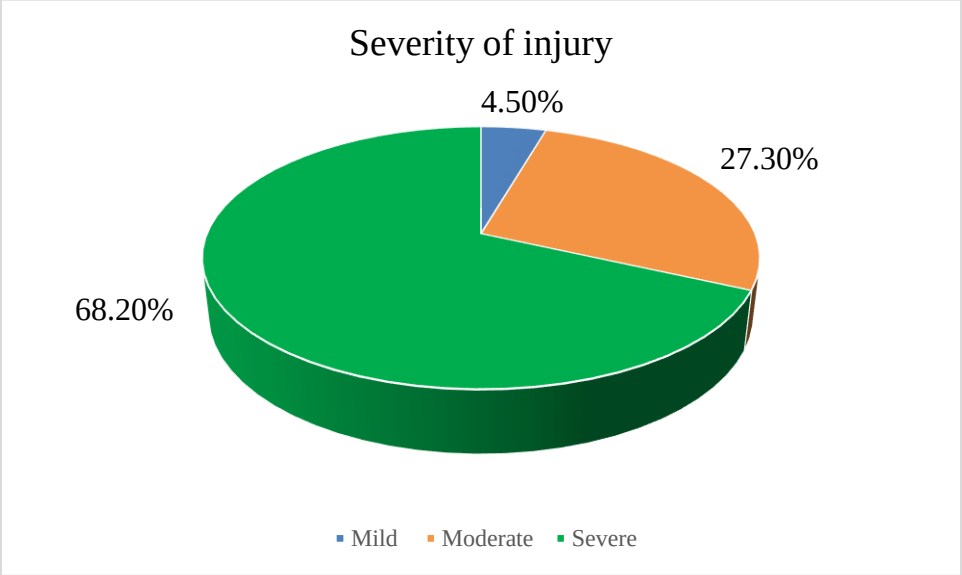


Figure 9: Severity of injury

Association between severity of this injury and ankle sprain

Table 8: Association between severity of this injury and ankle sprain

Variable	Chi square value	P value
Severity of injury	50.000	0.00

This analysis shows association between severity of this injury is highly significant ($p<0.05$) associated with Ankle sprain.

4.3.4 How many times experienced this injury of the participants

The pie chart shows, the highest number of participant's 40.90% (n=9) has no further experience this injury but 13.60% (n=3) 1 time, 31.80% (n=7) 2 time and 13.60% (n=3) 3 time experienced this injury (Figure 10).

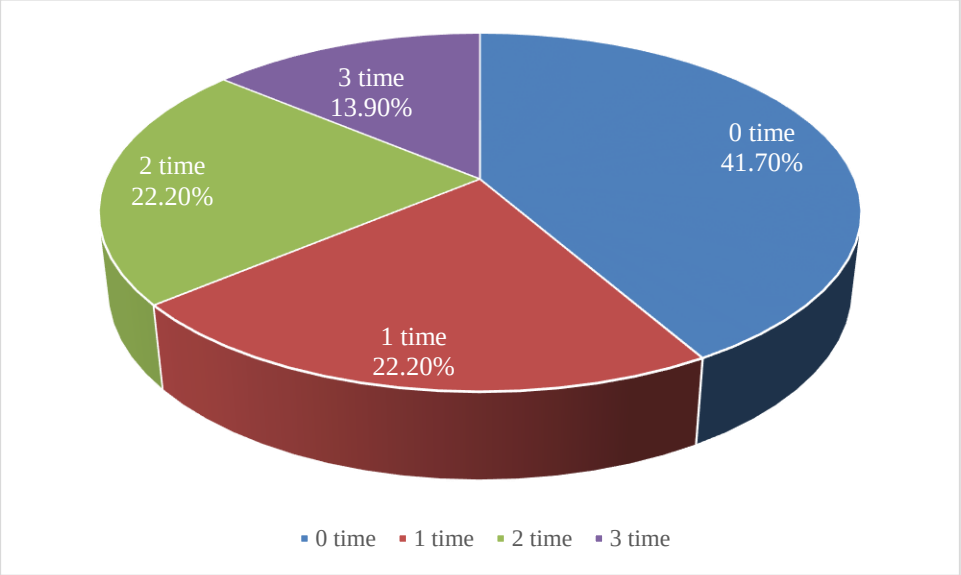


Figure 9: How many times experienced this injury of the participants

Association between how many times experienced this injury and ankle sprain

Table 9: Association between how many times experienced this injury and ankle sprain.

Variable	Chi square value	P value
How many times experienced this injury	9.053	0.029

This analysis shows association between how many times experienced this injury is significant ($p<0.05$) associated with Ankle sprain.

4.3.5 Duration of warm up and cool down

The elevated number of participants 18.20% (n=4) duration of warm up and cool down activity were 15 minutes or less than 15 minutes, 81.80% (n=18) were under the duration of 16 minutes or more than 16 minutes (Figure 11).

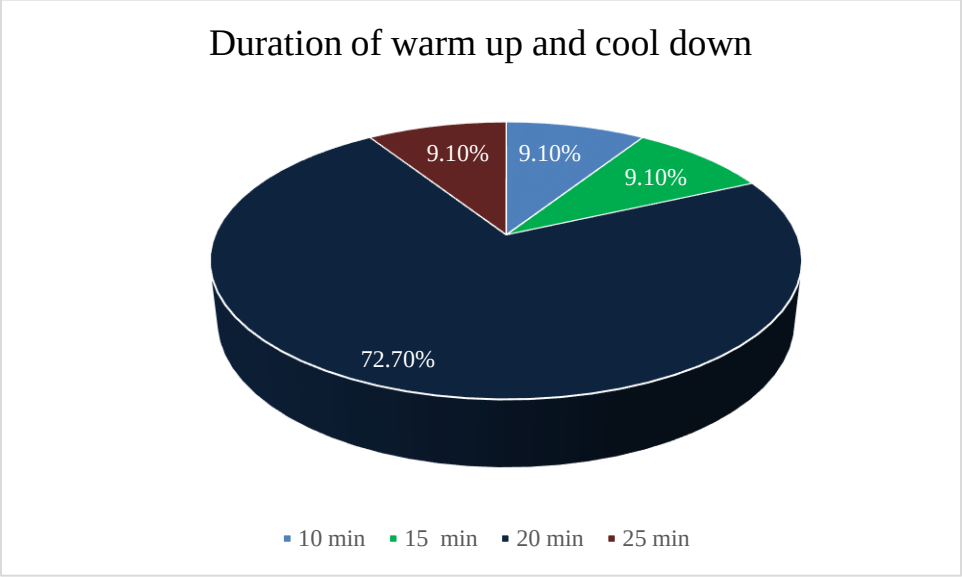


Figure 11: Duration of warm up and cool down

Association between duration of warm up and cool down activities with ankle sprain.

Table 10: Association between duration of warm up and cool down session and ankle sprain.

Variable	Chi square value	P value
Duration of warm up and cool down	7.875	0.049

This analysis shows duration of warm up and cool down session is significant ($p<0.05$) associated with Ankle sprain.

4.3.6 Treatment of the participants

Among the injured participants 9.1% (n=2) took drugs, 40.9% (n=9) took physiotherapy and 50% (n=11) took both treatment (Figure 12).

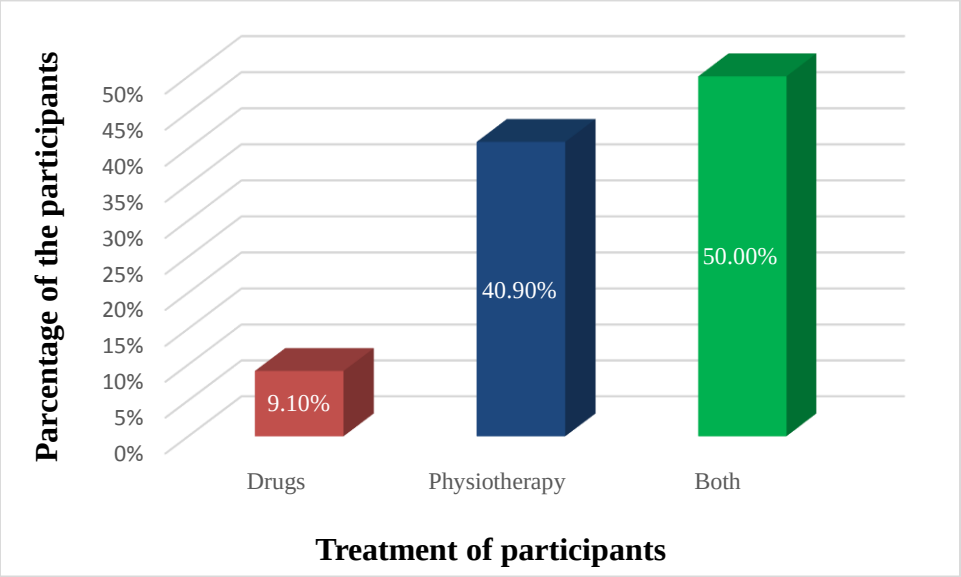


Figure 12: Treatment of injury

Association between treatment taken by the participants and ankle sprain

Table 11: Association between treatment taken by the participants and ankle sprain

Variable	Chi square value	P value
Treatment taken by the participants	50.000	0.00

This analysis shows that treatment taken by the participants is highly significant ($p<0.05$) associated with Ankle sprain.

Association between Ankle sprain and its associated factors

Associated factors	Chi square value	P value	Comments
Age of the participants	3.763	0.709	Non significant
Educational level of the participants	5.720	0.126	Non significant
Training events	5.808	0.669	Non significant
Duration of training	15.611	0.016	Significant
Posture	5.422	0.143	Not significant
Associated ankle injuries	15.909	0.001	Significant
Type of injury	50.000	0.00	Significant
Severity of injury	50.000	0.00	Significant
How many times experience this injury	9.053	0.029	Significant
Duration of warm up and cool down	7.875	0.049	Significant
Treatment taken by the participants	50.000	0.00	Significant

CHAPTER: V DISCUSSION

In this study ankle sprain is present 72% (n=36) participant's and absent in 28% (n=14) participant's. According to Chan et al. (2011) ankle sprain accounts for up to 40% of all athletic injuries and is most commonly seen in athletes participating in football, cricket, tennis, hockey, basketball, soccer and running and up to 53% of basketball injuries and 29% of soccer injuries can be attributed to ankle injuries and 12% of time lost in football is due to ankle injuries.

In this study I found most of the participants were injured 27.80% (n=10) at the age of 17 and 18 years and secondly 16 and 15 years ages of participant's are most common for the injury. Less common injured participants of this study at the age of 13 and 14 years. The peak incidence of ankle sprain occurred between fifteen and nineteen years of age, with an estimated incidence rate of 7.2 per 1000 person-years (Waterman et al., 2010). So, male athletes over 15 years are vulnerable for incidence of injury.

In this study, the training event of injured participants are athletic, football, cricket, hockey, basketball and gymnastic. The highest number of injured participants 36.40% are athletic trainee. Secondly most common event in football 22.70%, cricket and hockey equal percent 9.10% of injured trainee, in basketball 9.10% but less common event is gymnastic 4.50% participants are injured. A study named 'epidemiology of ankle sprain' that basketball was most commonly associated with ankle sprain, accounting for 20.3% of all sprains and 41.1% of those sustained during athletic activity. Football (9.3%), soccer (7.9%), running (7.2%), volleyball (4.0%), softball (3.6%), baseball (3.0%), and gymnastics (2.1%) were the most common remaining athletic activities causing an ankle sprain (Waterman et al., 2010).

Among all participant's has 4.5% (n=1) great toe and /or other finger injury and 22.7% (n=5) fifth metatarsal fracture and 18.20% (n=4) calcaneus fracture. But in this study 54.50% (n=12) participants has no associated ankle injury.

A study named "the incidence and prevalence of ankle sprain injury" the main findings of the meta-analysis demonstrated a higher incidence of ankle sprain in females compared with males (13.6 vs 6.94 per 1,000 exposures), in children compared with adolescents (2.85 vs 1.94 per 1,000 exposures) and adolescents compared with adults (1.94 vs 0.72 per 1,000

exposures). The sport category with the highest incidence of ankle sprain was indoor/court sports, with a cumulative incidence rate of 7 per 1,000 exposures or 1.37 per 1,000 athlete exposures and 4.9 per 1,000 h (Doherty et al., 2013).

Among the 50 participants who are injured, in this study higher number of injured participants was found that there were normal curvature 77.30% (n=17) and 4.5% (n=1) lordotic, 13.60% (n=3) kyphotic, 4.5% (n=1) scoliotic.

Participants of Bangladesh Krira Shikkha Protisthan were most commonly affected by direct injury 72.70%, and others were affected by overuse injury 27.30%. In contrast, significantly fewer injuries occurred during the follicular phase (days 1 to 9) their 45 injuries, 13% overuse, 32% direct (Arendt & Dick, 2006).

In this study, has no further experience this injury 40.90% but 13.60% (n=3) 1 time, 31.80% (n=7) 2 time and 13.60% (n=3) 3 time experienced this injury.

Among the participants who are injured, in this study higher number of injured participants undergo less than or equal 5 years 86.40% and 13.60% duration of training is greater than 6 years. In the American Journal of Sports Medicine a study shows that less than 4 year practice session higher rate (55.9%) of injury occurs among 509 athlete. The elevated number 81.80%, participants duration of warm up and cool down were more than 16 min and 18.20% were under duration of less than or equal 15 min in this study. Another study shows that 9.1% within 76 participants done warm up–cool down activity to prevent athletic injury (Payne et al., 1997).

Among the 50 participants who are injured, in this study higher number of injured participant's has 68.20% (n=15) were severe injured, 27.30% (n=6) moderate injured and 4.50% (n=1) mild injured.

In this study, higher rate of injured athletes 72.70% educational background is in the secondary school certificate, 18.20% were in level of junior school certificate, 4.50% in the higher secondary level, 4.50% injured trainees undergoes primary school certificate level at Bangladesh Krira Shikkha Protisthan. Ankle ligament sprain were also reported to be the most common injury for college athletics in the United States (Fong et al., 2009).

In a survey of adolescent athletes ratio between flexibility and athletic injury among 320 female athletes that 82.3% injury occur due to lower flexibility rate and injury of female

athletes also related with BMI also according that under-weight are commonly include in 65% risk of athletic injury (Mechelen et al., 2006).

As mentioned by Freddie et al. (2001) athletes among 1200 trains in England National Federation of Athletics have taken physiotherapy 84% after injury and 26% took conservative or surgical treatment. Among the injured participants 9.1% took drugs, 40.90% took physiotherapy and 50% took both treatment.

The study should be considered in light of the following limitations. Researcher can manage only 50 samples which are very small to generalize the result for the wider population of the young male athletes. There are no literatures about the ankle sprain among the young male athletes in the perspective of Bangladesh so it is difficult to compare the study with the other research. The researcher able to collect data only from selected area - BKSP for a short period of time which was affect the result of the study to generalize for wider population. The questionnaire was developed through searching sufficient literature and specially according to the available well documented data of BKSP but considering the context of the demography of the population a pilot study would substantial before developing questionnaire.

CHAPTER: VI CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Bangladesh Krira Shikkha Protisthan is the largest governmental organization aims to explore talents in sports and train them, also give opportunity to play in different national or international competitions. From the perspective of Bangladesh number of male athletes is abroad than fewer. The result of the study indicates participants of Bangladesh Krira Shikkha Protisthan were most commonly affected by direct injury rather than indirect injury. Variation in anatomical body structure (height, weight) and fitness (BMI) and training duration were the primary factors of their injury, fifth metatarsal and calcaneus is the common associated injured site. The study indicates recurrent of injury was another risk factor for athletes and the participants who have trained for long duration have less injury rate. The injury risks associated with the nature of the sport, and in BKSP most of the injured athletes' age range is more than 16 year and athletic is the most vulnerable sporting event. Trainees were dependent on physiotherapy rather than drug after injury.

6.2 Recommendation

The researcher proposed the following recommendation to certain authority and personnel to prevail over limitation: Researcher can manage only 50 samples which are very small to generalize the result for the wider population of the male athletes. There are no literatures about the ankle sprain among the male athletes in the perspective of Bangladesh so it is difficult to compare the study with the other research. The researcher able to collect data only from selected area - BKSP for a short period of time which will affect the result of the study to generalize for wider population. So for the further proposal it is strongly recommendation to increase sample size and use simple random sampling by include participants from different sports organizations with adequate time to generalize the result in all over the country. And the result of the study demonstrates the frequency of injury among male athletes and characteristics of athletic injury and factors associating injury in male athletes. In this study only prevalence of injury identified it could be more specified if and effectiveness of physiotherapy treatment also done among male athletes which might be play an vital role in improving the professional efficacy.

REFERENCES

- Arendt, E., and Dick, R., (2006). Knee injury patterns among men and women in collegiate basketball and soccer. The American Journal of Sports Medicine, 23:694-701.
- Agel, J., Arendt, E. A., and Bershadsky, B., (2005). Anterior cruciate ligament injury in National Collegiate Athletic Association basketball and soccer a 13-year review. The American Journal of Sports Medicine, 33(4):524-531.
- Backman, L.J. and Danielson, P., (2011). Low range of ankle dorsiflexion predisposes for Patellar Tendinopathy in Junior Elite Basketball Players a 1-Year prospective study. The American Journal of Sports Medicine, 39(12):2626-2633.
- Baily, D.M., (1997). Research for the Health Professional: A practical guide, F.A. Davis Company: Philadelphia.
- Chan, K.M., Fong, D.T.P., Hong, Y., Yung, P.S.H. and Lui, P.P.Y., (2008). Orthopaedic sport biomechanics–a new paradigm. Clinical Biomechanics, 23:S21-S30.
- Chan, K. W., Ding, B. C., and Mroczek, K. J., (2011). Acute and chronic lateral ankle instability in the athlete. Bulletin of the NYU Hospital for Joint Diseases, 69(1):17.
- Cordova, M. L., Scott, B. D., Ingersoll, C. D., and LeBlanc, M. J., (2005). Effects of ankle support on lower-extremity functional performance: a meta-analysis. Medicine and Science in Sports and Exercise, 37(4):635-641.
- Croy, T., Koppenhaver, S., Saliba, S. and Hertel, J., (2013). Anterior talocrural joint laxity: diagnostic accuracy of the anterior drawer test of the ankle. Journal of Orthopaedic & Sports Physical Therapy, 43(12):911-919.
- Cumps, E., Verhagen, E. and Meeusen, R., (2007). Prospective epidemiological study of basketball injuries during one competitive season: ankle sprains and overuse knee injuries. Journal of Sports Science and Medicine, 6(2):204-211.
- Davenport, E; Todd, Kulig, K; and Fisher, E; Beth., (2013). Ankle manual therapy for individuals with postacute ankle sprains: description of a randomized, placebo-controlled clinical trial, 139:1029-2133.

- Doherty, C., Delahunt, E., Caulfield, B., Hertel, J., Ryan, J., and Bleakley, C., (2013). The incidence and prevalence of ankle sprain injury: a systematic review and meta-analysis of prospective epidemiological studies. Sports Medicine, 44(1):123-140.
- Eils, E. and Rosenbaum, D., (2006). The main function of ankle braces is to control the joint position before landing. Foot & Ankle International, 24(3):263-268.
- Engebretsen, A. H., Myklebust, G., Holme, I., Engebretsen, L., and Bahr, R., (2010). Intrinsic risk factors for acute ankle injuries among male soccer players: A prospective cohort study. Scandinavian Journal of Medicine & Science in Sports, 20(3):403-410.
- Estep, A. E., (2016). An Epidemiological Study of Ankle Injuries Among Football Players At A Division I University.
- Fong, D. T. P., Hong, Y., Chan, L. K., Yung, P. S. H., and Chan, K. M., (2007). A systematic review on ankle injury and ankle sprain in sports. Sports Medicine, 37(1):73-94.
- Fong, D.T.P., Man, C.Y., Yung, P.S.H., Cheung, S.Y. and Chan, K.M., (2008). Sport-related ankle injuries attending an accident and emergency department. Injury, 39(10), pp.1222-1227.
- Fong, P; Daniel, Chan,Y;Yue, and Mok,M;Kam., (2009). Understanding acute ankle ligamentous sprain injury in sports, 20(7):778.
- Foster, A., Blanchette, M. G., Chou, Y. C., and Powers, C. M., (2012). The influence of heel height on frontal plane ankle biomechanics: implications for lateral ankle sprains. Foot & Ankle International, 33(1):64-69.
- Gross, M. T., and Liu, H. Y., (2003). The role of ankle bracing for prevention of ankle sprain injuries. Journal of Orthopaedic & Sports Physical Therapy, 33(10):572-577.
- Hägglund, M., Waldén, M., and Ekstrand, J., (2013). Risk factors for lower extremity muscle injury in professional soccer the UEFA injury study. The American Journal of Sports Medicine, 41(2):327-335.
- Hershman, E.B., Anderson, R., Bergfeld, J.A., Bradley, J.P., Coughlin, M.J., Johnson, R.J., Spindler, K.P., Wojtys, E., Powell, J.W., Collins, J.T. and Casolaro,

M.A., (2012). An analysis of specific lower extremity injury rates on grass and FieldTurf playing surfaces in National Football League Games 2000-2009 seasons. The American Journal of Sports Medicine, 40(10):2200-2205.

- Hootman, J. M., Dick, R., and Agel, J., (2007). Epidemiology of collegiate injuries for 15 sports: summary and recommendations for injury prevention initiatives. Journal of Athletic Training, 42(2):311.
- Hosea, T. M., Carey, C. C., and Harrer, M. F., (2000). The gender issue: epidemiology of ankle injuries in athletes who participate in basketball. Clinical Orthopaedics and Related Research, 372:45-49.
- Hubbard, T.J. and Hertel, J., (2006). Mechanical contributions to chronic lateral ankle instability. Sports Medicine, 36(3):263-277.
- Hubbard, T.J., Kramer, L.C., Denegar, C.R. and Hertel, J., (2007). Contributing factors to chronic ankle instability. Foot & Ankle international, 28(3):343-354.
- Kaminski,W ;Thomas, Hertal ,J; and Amendola ,N., (2013). National athletic trainers association position statement: Conservative management and prevention of ankle sprains in athletics, 48(4):528-545
- Klügl, M., Shrier, I., McBain, K., Shultz, R., Meeuwisse, W.H., Garza, D. and Matheson, G.O., (2010). The prevention of sport injury: an analysis of 12 000 published manuscripts. Clinical Journal of Sport Medicine, 20(6):407-412.
- Lin, C.W.C., Hiller, C.E. and de Bie, R.A., (2010). Evidence-based treatment for ankle injuries: a clinical perspective. Journal of Manual & Manipulative Therapy, 18(1):22-28.

- Manske, Robert C. "Glenohumeral instability (2016)." Physical Therapy: Treatment of Common Orthopedic Conditions: 104.
- McCriskin, J; Cameron,L. Kenneth; and Orr ,D .Justin., (2015). Management and prevention of acute and chronic lateral ankle instability in athletetic patient populations, World Journal Orthopedic, 6(2):161-171
- McHugh, M. P., Tyler, T. F., Tetro, D. T., Mullaney, M. J., and Nicholas, S. J., (2006). Risk factors for noncontact ankle sprains in high school athletes the role of

hip strength and balance ability. The American Journal of Sports Medicine, 34(3):464-470.

- McKeon, P. O., and Hertel, J., (2008). Systematic review of postural control and lateral ankle instability, part II: is balance training clinically effective? Journal of Athletic Training, 43(3):305-315.
- Merlino, J., and Perisa, J., (2012). Low back pain in a competitive cricket athlete. The International Journal of Sports Physical Therapy, 7(1):101-108.
- Mohammadi, F., (2007). Comparison of 3 preventive methods to reduce the recurrence of ankle inversion sprains in male soccer players. The American Journal of Sports Medicine, 35(6):922-926.
- Morrison, K. E., and Kaminski, T. W., (2007). Foot characteristics in association with inversion ankle injury. Journal of Athletic Training, 42(1):135.
- Olmsted, L. C., Vela, L. I., Denegar, C. R., and Hertel, J., (2005). Prophylactic ankle taping and bracing: a numbers-needed-to-treat and cost-benefit analysis. Journal of Athletic Training, 39(1):95.
- Payne, K.A., Berg, K. and Latin, R.W., (1997). Ankle injuries and ankle strength, flexibility, and proprioception in college basketball players. Journal of Athletic Training, 32(3):221.
- Petersen, W., Rembitzki, I.V., Koppenburg, A.G., Ellermann, A., Liebau, C., Brüggemann, G.P. and Best, R., (2013). Treatment of acute ankle ligament injuries: a systematic review. Archives of Arthopaedic and Trauma Surgery, 133(8):1129-1141.
- Tanen, L., Docherty, C. L., Van Der Pol, B., Simon, J., and Schrader, J., (2013). Prevalence of chronic ankle instability in high school and division I athletes. Foot & Ankle Specialist: 1938640013509670.
- Terada, M., Pietrosimone, B. G., and Gribble, P. A., (2013). Therapeutic interventions for increasing ankle dorsiflexion after ankle sprain: a systematic review. Journal of Athletic Training, 48(5):696-709.
- Villwock, M.R., Meyer, E.G., Powell, J.W., Fouty, A.J. and Haut, R.C., (2009). Football playing surface and shoe design affect rotational traction. The American Journal of Sports Medicine, 37(3):518-525.

- Waterman, B. R., Owens, B. D., Davey, S., Zacchilli, M. A., and Belmont, P. J., (2010). The epidemiology of ankle sprains in the United States. Journal Bone Joint Surgery American, 92(13):2279-2284.
- Willems, T.M., Witvrouw, E., Delbaere, K., Mahieu, N., De Bourdeaudhuij, I. and De Clercq, D., (2005). Intrinsic risk factors for inversion ankle sprains in male subjects a prospective study. The American Journal of Sports Medicine, 33(3):415-423.

BANGLADESH HEALTH PROFESSIONS INSTITUTE

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

Date: 05/04/17

Ref.

CRP-BHPI/IRB/04/17/67

To
Kamruzzaman
B.Sc in Physiotherapy,
Department of Physiotherapy
Session: 2011-2012, DU Reg. No: 1714
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal – "Prevalence of ankle sprain and it's associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan" by ethics committee.

Dear Kamruzzaman,

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application before February 23, 2016 to conduct the above mentioned thesis, with yourself, as the Principal investigator. The Following documents have been reviewed and approved:

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

Since the study involves answering a questionnaire that takes 10 to 15 minutes, have no likelihood of any harm to the participants and have possibility of benefit patients in their pain management and rehabilitation, the members of the Ethics committee has approved the study to be conducted in the presented form at the meeting held at 08:30 AM on February 25, 2016 at BHPI.

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

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ, ফোন ঃ ৭৭৪৫৪৬৪-৫, ৭৭৪১৪০৪ ফ্যাক্স ঃ ৭৭৪৫০৬৯
CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404, Fax : 7745069, E-mail : contact@crp-bangladesh.org, www.crp-bangladesh.org

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনষ্টিটিউট (বিএইচপিআই)

BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)

(The Academic Institute of CRP)

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

BHPI-Mirpur Campus, Plot-A/5, Block-A, Section-14, Mirpur, Dhaka-1206. Tel: 8020178,8053662-3, Fax: 8053661

সিআরপি-বিএইচপিআই/০৯/১৬/৬৫১৬ তারিখ ঃ ০৩.০৯.২০১৬

প্রতি
মহাপরিচালক
বাংলাদেশ ক্রীড়া শিক্ষা প্রতিষ্ঠান
জিরানী, সাভার, ঢাকা।

বিষয় ঃ রিসার্চ প্রজেক্ট এর জন্য আপনার প্রতিষ্ঠান সফর ও তথ্য সংগ্রহ প্রসঙ্গে।

জনাব,

আপনার সদয় অবগতির জন্য জানাচ্ছি যে, পক্ষাঘাতগ্রস্তদের পুনর্বাসন কেন্দ্রে-সিআরপি'র শিক্ষা প্রতিষ্ঠান বাংলাদেশ হেলথ্ প্রফেশনস্ ইনষ্টিটিউট (বিএইচপিআই) ঢাকা বিশ্ববিদ্যালয় অনুমোদিত বিএসসি ইন ফিজিওথেরাপি কোর্স পরিচালনা করে আসছে।

উক্ত কোর্সের ছাত্রছাত্রীদের কোর্স কারিকুলামের অংশ হিসাবে বিভিন্ন বিষয়ের উপর রিসার্চ ও কোর্সওয়ার্ক করা বাধ্যতামুলক।

বিএইচপিআই'র ৪র্থ বর্ষ বিএসসি ইন ফিজিওথেরাপি কোর্সের ছাত্র কামরুজ্জামান তার রিসার্চ সংক্রান্ত কাজের তথ্য সংগ্রহের জন্য আগামী ২০.০৯.২০১৬ থেকে ১৫.১০.২০১৬ তারিখ পর্যন্ত আপনার প্রতিষ্ঠানে সফর করতে আগ্রহী। তার রিসার্চ শিরোনাম

"Prevalence of ankle sprain and it's associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan."

তাই তাকে আপনার প্রতিষ্ঠান সফর এবং প্রয়োজনীয় তথ্য প্রদান সহ সার্বিক সহযোগীতা প্রদানের জন্য অনুরোধ করছি।

ধন্যবাদান্তে

মোঃ ওবায়দুল হক
অধ্যক্ষ-ভারপ্রাপ্ত
বিএইচপিআই।

বাংলাদেশ ক্রীড়া শিক্ষা প্রতিষ্ঠান
জিরানী, সাভার, ঢাকা
bksp.portal.gov.bd

নং-৩৪.০৪.০২০০.০০৪.০০.০১৩.১৫- ৫৫০ তারিখ: ১২ আশ্বিন ১৪২৩ বঙ্গাব্দ
২৬ সেপ্টেম্বর ২০১৬ খ্রিস্টাব্দ

বিষয়: রিসার্চ প্রজেক্ট তৈরীর জন্য তথ্য সংগ্রহের অনুমতি।

সূত্র: সিআরপি-বিএইচপিআই/০৯/১৬/৬৫১৬, তারিখ: ০৩/০৯/২০১৬খ্রি.।

উপর্যুক্ত বিষয় ও সূত্রের আলোকে নির্দেশক্রমে জানানো যাচ্ছে যে, রিসার্চ প্রজেক্ট তৈরীর নিমিত্ত ফিজিওথেরাপী কোর্সের ছাত্র কামরুজ্জামানকে ২৭ সেপ্টেম্বর হতে ১৫ অক্টোবর ২০১৬ খ্রি. তারিখ পর্যন্ত বিকেএসপি হতে তথ্য সংগ্রহের বিষয়ে কর্তৃপক্ষের সম্মতি জ্ঞাপন করা হলো।

26.9.2016
উপ-পরিচালক (প্রশিক্ষণ)
বিকেএসপি
ফোনঃ ৭৭৮৯২১৫-৬ (এক্স-২২৪)।

প্রাপক: জনাব মো: ওবায়দুল হক
ভারপ্রাপ্ত অধ্যক্ষ
বিএইচপিআই
সিআরপি, সাভার, ঢাকা।

অনুলিপি: সদয় জ্ঞাতার্থে ও কার্যার্থে
১। মহাপরিচালক, বিকেএসপি
২। পরিচালক (প্রশাসন ও অর্থ), বিকেএসপি
৩। অধ্যক্ষ, ক্রীড়া কলেজ, বিকেএসপি
৪। চিফ কোচ/সিনিয়র কোচ/কোচ.....বিকেএসপি
৫। নিরাপত্তা কর্মকর্তা, বিকেএসপি
৬। জনসংযোগ কর্মকর্তা, বিকেএসপি
৭। সংশ্লিষ্ট নথি।

সম্মতিপত্র

আসসালামুয়ালাইকুম ,

আমি কামরুজ্জামান ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদের অধিভুক্ত বাংলাদেশ হেলথ প্রফেশনস্ ইন্সিটিটিউট এর বি.এস.সি ইন ফিজিওথেরাপি কোর্সের চূড়ান্ত বর্ষের একজন শিক্ষার্থী। অধ্যায়নের অংশ হিসেবে আমাকে একটি গবেষণা সম্পাদন করতে হবে এবং এটা আমার প্রাতিষ্ঠানিক কাজের একটা অংশ। নিম্নোক্ত তথ্যাদি পাঠ করার পর অংশগ্রহণকারীদের গবেষণায় অংশগ্রহনের জন্য অনুরোধ করা হলো।

আমার গবেষণার বিষয় "বাংলাদেশ ক্রীড়া শিক্ষা প্রতিষ্ঠানে প্রশিক্ষণরত তরুণ পুরুষ খেলোয়ারদের মধ্যে এঙ্কেল স্প্রেন এবং সংশ্লিষ্ট বিষয়গুলির প্রকটতা"

গবেষণাটি সম্পাদনের জন্য, আমার তথ্য সংগ্রহ করা প্রয়োজন হবে। গবেষণার ক্ষেত্র বিবেচনা করে আপনারমাঝে আমার গবেষণায় অংশগ্রহণ করার জন্য প্রয়োজনীয় বৈশিষ্ট্য লক্ষ্য করা গেছে। এজন্য, আপনি আমার গবেষণার একজন সম্মানিত অংশগ্রহণকারী হতে পারেন এবং আমি আপনাকে আমার গবেষণায় অংশগ্রহন করতে অনুরোধ জানাচ্ছি।

আমি প্রতিজ্ঞা করছি যে,এই গবেষণা আপনার জন্য ঝুঁকিপূর্ণ হবে না অথবা আপনার কোন ক্ষতি করবে না। গবেষণা চলাকলীন সময়ে কোন রকম দ্বিধা বা ঝুঁকি ছাড়াই যেকোন সময়ে আপনি এটাকে বাদ দিতে পারবেন। এই গবেষণার প্রাপ্ত তথ্য সম্পূর্ণভাবে গোপনীয় থাকবে এবং অংশগ্রহণকারীর ব্যক্তিগত তথ্য অন্য কোথাও প্রকাশ করা হবে না।

শুরু করার আগে আপনার কি কোন প্রশ্ন আছে ?

আমি কি শুরু করতে পারি ?

☐ হ্যাঁ ☐ না

অংশগ্রহণকারীরস্বাক্ষর ও তারিখ .....

গবেষকের স্বাক্ষর ও তারিখ .....

সাক্ষীর স্বাক্ষর ও তারিখ .....

Consent Form

Assalamualaikum,

I am Kamruzzaman, Final Year of B.Sc. in Physiotherapy student of Bangladesh Health Professions Institute (BHPI) under the Faculty of Medicine, University of Dhaka. To obtain my Graduation degree, I have to conduct a research project and it is a part of my study. The participants are requested to participate in the study after a brief following.

My research title is "**Prevalence of Ankle Sprain and it's associated factors among the young male trainees at Bangladesh Krira Sikkha Protisthan".**

To fulfil my research project, I need to collect data. So, you can be a respected participant of this research.

I would like to inform you that this is a purely academic study and will not be used for any other purposes. I assure that all data will be kept confidential. Your participation will be voluntary. You may have the rights to withdraw consent and discontinue participation at any time of the experiment. You also have the rights to answer a particular question that you don't like.

Do you have any questions before I start?

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

Yes ☐ No ☐

Signature of participant and Date ……..

Signature of the researcher and Date……..

Signature of the witness and Date……..

প্রশ্নাবলী

কোড নং:	আইডি নং:	তারিখ:
ঠিকানা:		

খণ্ড ১: সামাজিকচিত্রের প্রশ্ন

ক্রমিক নং	প্রশ্ন	উত্তর	হিসাব
১.	বয়স	_____বছর	
২.	শিক্ষাগত যোগ্যতা	প্রাইমারি স্কুল সার্টিফিকেট (পিএসসি)= ১ জুনিয়র স্কুল সার্টিফিকেট (জিএসসি)= ২ সেকেন্ডারি স্কুল সার্টিফিকেট (এসএসসি)= ৩ হাইয়ার সেকেন্ডারি স্কুল সার্টিফিকেট (এইচ এস সি)= ৪ অন্যান্য (উল্লেক্ষ)=৫	
৩.	প্রশিক্ষণ কার্যক্রম	ক্রিকেট =১ এথলেটিক=১৫ ফুটবল=২ টেবিল টেনিছ=১৬ আর্চেরি= ৩ উশু=১৭ বাস্কেটবল= ৪ বক্সিং=৫ হকি= ৬ সুইমিং= ৭ শুটিং=৮ জিমন্যাসটিক=৯ টেনিস= ১০ জুডো= ১১ কেরাতি=১২ ভলিবল=১৩	

		তাঈকউন্দু= ১৪	
৪.	প্রশিক্ষণ সময়কাল	১ বছরের কম=১ ১ বছর=২ ২ বছর=৩ ৩ বছর=৪ ৪ বছর=৫ ৫ বছর=৬ ৬ বছর=৭ ৭ বছর=৮ অন্যান্য (উল্লেক্ষ)=৯	

খণ্ড ২: স্বাস্থ্য সম্পর্কিত প্রশ্ন

ক্রমিক নং	প্রশ্ন	উত্তর	হিসাব
৫.	উচ্চতা	_____মিটার	
৬.	ওজন	_____ কেজি	
৭.	বিএমআই(WHO অনুসারে) ওজনেকম= <১৮.৫	ওজনেকম = ১ স্বাভাবিক ওজন = ২	

	স্বাভাবিক ওজন= ১৮.৫-২৪.৯ ওজনে বেশি =২৫-২৯.৯ স্থুলতা= ৩০ অথবা বৃহত্তর	ওজনে বেশি =৩ স্থুলতা =৪	
৮.	দেহভঙ্গি	লর্ডোসিস=১ কাইফসিস=২ স্কলিওসিস=৩ স্বাভাবিক বক্রতা=৪	

খণ্ড ৩: আঘাত জড়িত প্রশ্ন

ক্রমিক নং	প্রশ্ন	উত্তর	হিসাব
৯.	এঙ্কেল স্প্রেইন	হ্যাঁ=১ না=২	
১০.	সংশ্লিষ্ট গোড়ালি আঘাত	গ্রেটারটো এবং অন্যান্য ফিঙ্গার ফ্রেকচার= ১ টেনডোএকিলিস রাপচার=২ প্লানটার ফাসাইটিস=৩ ফাইব মেটাটারসাল ফ্রেকচার=৪ ডিসটাল ফিবুলা ফ্রেকচার=৫ কেলকেনিওফিবুলার লিগামেন্ট ইঞ্জুরি=৬ কেলকেনিয়াস ফ্রেকচার=৭ নেভিকুলার ফ্রেকচার=৮	

		সাবটেলার জয়েন্ট ইনস্টেবিলিটি=৯ টেলোফিবুলার লিগামেন্ট ইঞ্জুরি=১০ ডেলটয়েড লিগামেন্ট ইঞ্জুরি=১১	
১১.	আঘাতের ধরন	সরাসরি(আঘাতমূলক)=১ পরোক্ষ(অতিরিক্ত ব্যাবহার)=২	
১২.	আঘাতের প্রখরতা	স্বল্প=১ মোটামোটি=২ তীব্র=৩	
১৩.	ব্যাথার ধরন (VAS স্কেল অনুসারে)	০ ১০	
১৪.	আঘাতের পুনরাবৃত্তি	হ্যাঁ=১ না=২	
১৫.	কতবার আঘাতের অভিজ্ঞতা হয়েছে	_____ বার	
১৬ .	গরম করা এবং কার্যকালাপ ঠাণ্ডা করা	হ্যাঁ=১ না=২	
১৭.	উষ্ণতা এবং ঠাণ্ডার সময়কাল	_____মিনিট	
১৮.	চিকিৎসা	ঔষধ=১ ফিজিওথেরাপি=২ ঔষধ ও ফিজিওথেরাপি উভয়ই=৩	

Questionnaire

Code no:	ID no:	Date:
Address:		

Part 1: Sociodemographic Questions

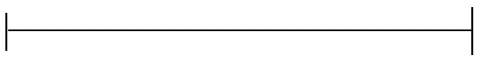
SL No.	Questions	Responses	Score
1.	Age	_____years	
2.	Education	Primary School Certificate (PSC)= 1 Junior School Certificate (JSC)= 2 Secondary School Certificate (SSC)= 3 Higher Secondary Certificate (HSC)= 4 Other (Specify)= 5	
3.	Training event	Cricket =1 General Athletic=15 Football=2 Tabil tennis=16 Archery= 3 Wushu=17 Basketball= 4 Boxing=5 Hockey= 6 Swimming= 7 Shooting=8 Gymnastic=9 Tennis= 10 Judo= 11 Karate=12 Vollyball=13 Taekwondo=14	
4.	Duration of training	Less than 1yr=1 1yr=2	

		2yr=3 3yr=4 4yr=5 5yr=6 6yr=7 7yr=8 Other (Specify)=9	

Part 2: **Health related questions**

SL No.	Questions	Responses	Score
5.	Height	_____meter	
6.	Weight	_____ kg	
7.	BMI(According to WHO) Underweight= <18.5 Normal weight= 18.5-24.9 Over weight =25-29.9 Obesity= 30 or greater	Underweight= 1 Normal weight= 2 Over weight=3 Obesity=4	
8.	Posture(Palm line scale)	Lordosis=1 Kyphosis=2 Scoliosis=3 Normal curvature=4	

Part 3: Injury related questions

SL NO	Questions	Responses	Score
9.	Ankle sprain	Yes =1 No =2	
10.	Associated ankle injuries	Great toe and/or other finger fracture =1 Tendonachilis rupture =2 Planter fasciitis =3 Fifth metatarsal fracture =4 Distal fibula fracture=5 Calcaneofibular ligament injury=6 Calcaneus fracture=7 Navicular fracture=8 Subtalar joint instability=9 Talofibular ligament injury=10 Deltoid ligament injury=11	
11.	Type of injury	Direct(Traumatic)=1 Indirect(Overuse)=2	
12.	Severity of injury	Mild=1 Moderate=2 Severe=3	
13.	Nature of pain (According to VAS scale)	 0 10	
14.	Recurrence of injury	Yes=1 No=2	
15.	How many times you experienced this injury	_____times	
16.	Warm up & cool down activity	Yes=1 No=2	
17.	Duration of warm up & cool down	_____Min	

18.	Treatment	Drug=1 Physiotherapy=2 Both drug & physiotherapy=3	