COMMON INJURIES AMONG FEMALE ATHLETE TRAINS IN BANGLADESH KRIRA SIKHA PROTISTHAN

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We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled

COMMON INJURIES AMONG FEMALE ATHLETE TRAINS IN BANGLADESH KRIRA SIKHA PROTISTHAN

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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 decline that for any publication, presentation or dissemination of information of the study. I would be bound to take written consent of my supervisor.

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Abbreviations

ACL:	Anterior cruciate ligament
BHPI:	Bangladesh health Professions Institute
BKSP:	Bangladesh Krira Sikkha Protisthan
BMI:	Body Mass Index
LCL:	Lateral cruciate ligament
MCL:	Medial coleteral ligament
MMT:	Manual muscle testing
PRICE:	Protect, Rest, Ice, Compress, Elevate
ROM:	Range of motion
SPSS:	Statistical Package of the Social Sciences

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Abstract

Purpose: To evaluate the prevalence of sports injuries among the female athletes trains in BKSP. *Objective:* To identify the frequency and nature of injury among female athletes, to determine trainee's age range and their participating sporting event, identify the health related factors that is associated with higher rates of injury and recurrence and to ascertain the treatment after injury. *Methodology:* A quantitative cross-sectional study design was chosen to achieve the objectives of the study. 99 subjects were selected through purposive sampling technique from the injured female athletes who trained in BKSP by using a structural questionnaire to collect data. *Results:* The result of the study demonstrates that, the peak age group was 15-20 year (99 subjects, 57.6% in total subject).The most frequent sports of injury was cricket (*n*=20, 20%) and the less injury rate found who trained greater than or equal 6 year (*n*=49, 49.5%).The end result also indicates most commonly injured area was ankle and shoulder (*n*=19, 19.2%).The prevalence of menstrual disturbance 23% (*n*=23) and among them higher rate was overuse injury(13%) and direct injury (10%). Among the participants 87.9% was under normal weight. Flexibility rate less than or equal 14 cm has higher percentage of injury (moderate 54%, severe 33% and 14% mild injury). The finding also reflects that the treatment was consisting drug as frequent as physiotherapy (*n*=33, 39% taken drug and *n*=27, 27% physiotherapy). *Conclusion:* The vulnerable age range is over 15 were frequent injury occurring among athletes and noticeably flexibility and menstrual disturbance is the key issues to cause of injury. Health education and perform regular physical activity along with physiotherapeutic exercises can prevent injury.

Key words: Female athlete, Injury.

CHAPTER: I INTRODUCTION

1.1 Background

The ancient Greeks excluded women from participating at the ancient Olympics, even as spectators. Brukner & Khan (1993) stated that in Victorian era, women were regarded as weak, fragile, and passive. Consequently no female events were held in first modern Olympiad in 1896, only two sports tennis and golf had female competitors in 1900 Olympic in Paris. But now there has been a steadily increased participation of women in the Olympic Games. Female athletes have become ever more implicated in sporting activity over past two decades (Dugan, 2005).

Historical evident suggested that physical activity or games have existed in all cultures and correspondently that is related with different types of injuries. About 56% of female athletes are able to conduct with physiotherapist in the world (Glubok & Tamarin, 1976). Trog et al, (1990) suggested physiotherapy played an intrigue part in the multidisciplinary approach to the management of sports injuries. In Bangladesh sports physiotherapy is prosperous now a days and the management of athletics injury is not so first-rate. The genetic dissimilarity of sexes between male and female athletes causes anatomic, physiologic and endocrinological variation and differences in the frequency and nature of the athletic injuries (Zelisco et al, 1982). The aim of physiotherapy is to asses, treat and fully rehabilitate the athlete post injuries, post-operatively, to prevent further injury and to return the athletes to sports in the shortest possible time. With the popularity of different game in both national and international level demand of sports physiotherapy is increased.

Eriksson et al, (1900) found sports physiotherapy is becoming a bright focus point in rehabilitation of sports injury and the field becomes more specific by performing more basic research and conducting well designed clinical trials in recent years.

Women participate at the first modern Olympic games in Athens in 1896 was nil however, a century later at the same place – during the 2004 Olympics, 4329 women from all over the world competed in the majority of 300 official events (Pecina & Bojanic, 2007). Increased sports participation of female athletes has also increased the incidence of sport-related injuries either acute trauma or overuse injuries. Male and female athletes have about the same injury rate per hour of training. Statics shows that, 85% exertional injury and the other 15% are overuse injury occur in female athletes in abroad (Hirst et al, 2007).

In 2002, about 1.3 million Americans female athletes suffered from sports injury. Of those, 53% were minor enough to be self-treated or left untreated. However, about 1 million Americans annually receive medical attention for their sports-related injuries. That equate to almost 26 per 1,000 people (Beer et al, 2004). Injury rates are highest for athletes who participate in contact sports, but the most serious injuries are associated with individual activities. Baseball and athletics are the leading causes of sports-related trauma in the United States, with 68% of injuries caused by contact with the ball or player-player collision or being hit by instrument (Whieldon & Cerny, 1990).

Athletic injuries, 80% of which affect soft tissues, fall into a few common categories: strains and sprains, overuse syndromes, direct trauma, hematoma and most frequently seen injured area are ankle, knees, shoulders and spine (Hunt et al, 2011). In clinical sports medicine physiotherapist includes injury prevention measures, diagnosis, treatment and rehabilitation, performance enhancement through the training of reassuring soft tissue structure injury (Brukner & Khan, 1993).

As discussed by Gard et al, (2000) the ultimate goal of rehabilitation after athletic injury is to restore symptom free movement and function, allowing individual level of activity in the shortness time possible. This study aims to address the problems and design physiotherapy intervention for this female athlete with musculoskeletal problem.

1.2 Rationale

Injury to the athletic trainees is common and most of the time these are over look by the training authority. Throughout the world, female athletes are not in a large number as male and having less effort to training, practice and competition schedules .The purpose of this study is to evaluate the importance of establish pre-participation physical screening/examination although neuromuscular and proprioceptive training program activity for a female athlete in Bangladesh which may enhance the athletic performance of female athlete.

Crisp et al, (2001) found that the most commonly injured area of a female athlete is shoulder and knee. So, this study will also used to review the common injuries reported, identify the potential risk factors for future injury and gain a better understanding for a health professional deals with the female athletes about the physical characteristics. In our country there is no such study about common injuries among female athletes and their management. So this study will introduce a problem oriented training program to prevent the common injuries and to develop evidence based project study to strengthen physiotherapy profession.

According to Hutson (2001), therapeutic management of athletes should begin before any injury occurs. Until now Bangladesh is behind addressing physiotherapy measures for female athletes in comparison to other countries. This study also will be helpful in making physiotherapist to aware about the musculoskeletal problem of female athletes and create an opportunity to work on sports background.

1.3 Research Question

- What are the common injuries among the injured female athlete trainees in BKSP?

1.4 Aim of the study

- To find out the prevalence of sports injuries among the female athletes trains in BKSP.

1.5 Objectives of the study

- To determine the frequency and nature of injury among female athletes.
- To expose the injured participants, age, training duration and sporting event.
- To ascertain the treatment of the athletic injuries.
- To explore the association between health related characteristics and rate of injury and its recurrence among female athletes.

1.6 Conceptual framework

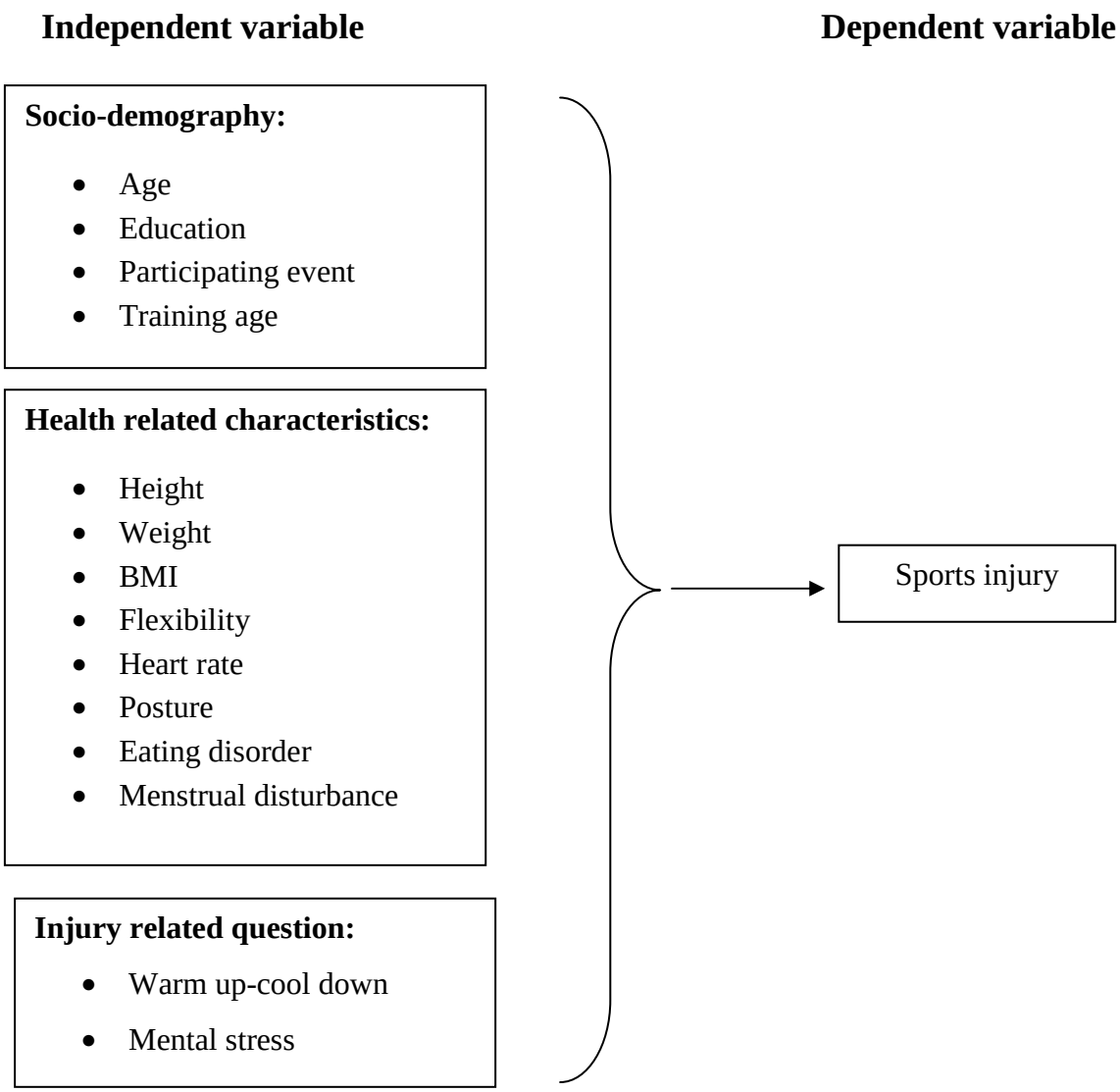

Table 1: List of variables

1.7 Operational Definition

Injury

Common types of physical injury are broken bones, soft tissue lesion (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. Sports injuries can affect bones or soft tissue (ligaments, muscles, tendons).

Female athletes

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 female participating athletic activity are called as female athletes.

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 LIERATURE REVIEW

Athletics is an exclusive collection of sporting events that involve competitive running, jumping, throwing, and walking. Athletics is track and field events (as modifier) ⇒ an athletics meeting of sports or exercises engaged in by athletes or else the theory or practice of athletic activities and training. Activities, such as sports, exercises, and games, that require physical skill and stamina the principles or system of training and practice for such activities called athletics. According to American heritage English dictionary (2004) - Athlete is a person possessing the natural or acquired traits, such as strength, agility, and endurance that are necessary for physical exercise or sports, especially those performed in competitive contexts.

According to Restolainen et al, (2009) stated that more than 3000 female athletes participated in the 1992 Olympics and 27% increase occurred at the 1996 Games, with more than 3800 female athletes participating. 1996 The Atlanta Olympics perceive a large amount of media coverage focused on female events and the gold medal women's soccer match attracted more than 64,000 spectators. Women won gold medals in team soccer, softball, gymnastics, and basketball, and they dominated the track and field events. In 1988 and 1998, 10% participation increased in boys' high school sports, while participation in girls' high school sports has risen nearly 40%. A study that compared injury rates for collision sports, contact sports, and noncontact sports, the authors found that varsity girls in contact sports had significantly higher injury rates per 100 players than varsity boys participating in contact sports (Whieldon & Cerny, 1990).

High School Athletics Participation Survey (1996) result found that 18% of girls' injuries are at the knee, while 10%of boys' injuries are knee-related, and 89%of surgeries performed. Males accounted for 80.3% of all soft tissue injuries. For both sexes the most common areas injured were the knee and ankle, with sprains/strains the most common injuries. Injuries involving the patellofemoral articulation were significantly more frequent among females. The most common sport of injury was football, with greater than 12 times the number of injuries seen in the next most common sport (Freddie & Stone, 2001).

Injuries can unfortunately occur in organized sports, exercise and other physical activities. However, joint, muscle and tendon injuries can occur while doing just about anything. Women are increasingly involved regular folks who happen to get the same injuries as professional male athletes. In fact, women are even more susceptible to some injuries than men in the sports (Morrison & Zoga, 2011).Variation of age influence athletic injury due to anatomical and physiological changes in to body. The highest rate of injury is among age five to 14 years old (59.3 per 1,000 people). As many as 20% of female who play sports get hurt, and about 25% of their injuries are classified as serious. More than 775,000 boys and girls under age 14 are treated in hospital emergency rooms for sports-related injuries (Zelisko et al, 1982). Between one-half and two-thirds of childhood sports injuries occur during practice, or in the course of unorganized athletic activity. According to the Centers for Disease Control and Prevention- more than 46,000 female athletes age 19 and younger experienced a sprain or strain of the ACL in 2006.

The effectiveness of performances is related to various basic traits found in girls, including their malnutrition, body type and physic type. Some of these traits related with heredity, others such as body weight, height, have hereditary implications, but may also be affected by environmental influences, including the nature and amount of exercise, nutritional practices and health habits. Students differ dramatically in these basic traits (Chan et al, 2000). Injury of female athletes related with BMI also, WHO declares a scale of measure Body Mass Index (BMI).The underweight are commonly include in risk of athletic injury. Literature reviews (Mechelen et al, 1996) and concerning injury enumerate many risk factors such as age, extremes in body mass index, decreased fitness, inexperience, short stature in women, increased body fat in men, less flexibility, strength imbalance between flexor and extensor muscle groups, history of previous injury, increased weekly running mileage, increased duration and frequency of endurance training, weight training, smoking, and competitive motivation.

Aside from obvious anatomic differences, there are several factors that may influence injury patterns including: differences in metabolism, circulation, and cardio respiratory capacity, body shape, size, and composition, and others. It has been

proposed, for example, that increased Quadriceps angle (Q angle), less developed vastus medialis, and a greater degree of genu valgum in the female knee contributes to the higher rate of patellofemoral disorders.

Eating disorders are especially common among athletes because the pressure of the sport and frequently the competition athletes participating in activities that emphasize leanness for performance and appearance are at a significantly greater risk. Male also develop eating disorders but at a much reduced incidence (approximately 90% female; 10% male). Athletes are wants to get fit, lose weight, excel in his or her sport, but then lose control and ends up with body and spirit ravaged by starvation, binge eating, purging, and frantic compulsive exercise. She is subject to the constant social pressure to be thin that affects all females in western countries, and she also finds herself in a sports climate that may overvalue performance, low body fat, and an idealized, unrealistic body shape, size, and weight. Thus, gymnasts, long-distance runners, divers, and figure skaters are more prone to developing eating disorders and related problems than those who compete in non weight-restricting sports such as volleyball or football (Petrie, 1993). Furthermore, disordered eating patterns are found more in female athletes than in males. In a survey of collegiate athletics conducted in 1992, "93% of the programs reporting eating disorders were in women's sports" (Sherman et al, 1996).

As sugged by Otis et al, (2005) there are several causes of injury in athletes but one of the most common cause is anemia which caused by decrease haematocrete, including; pseudoanemia (decreased HCT secondary to plasma expansion), iron deficiency anemia, “foot-strike” or exertional hemolysis, anemia of malnutrition (in eating disordered athletes), and exercise related gastro intestinal bleeding. Of these, the most common cause of true anemia in athletic females, as in the general population, is iron deficiency. Many female athletes, especially “low weight” athletes .The small amounts of iron lost in urine and sweat during exercise is likely insignificant, minor gastrointestinal bleeding can occur in some distance runners, cyclists, and triad athletes from superficial stomach “stress ulcers” or from “ischemic colitis” when bloodies shunted from the gut to working muscles (Tiermy et al, 2002).

As discussed by Wojtys et al, (1998) menstrual disturbance increased the incidence of injury in women during the ovulatory phase of the menstrual cycle, when surgein estrogen production occurs and the epidemic of noncontact ACL tears in female athletes may be related to hormonal fluctuations. Amenorrhea occurs in 3.4% to 66% of adult female athletes (depending on the population studied and inclusion criteria used), compared with only 2% to 5% of women in the general population and these issues often go unreported and unrecognized because of the secretive nature of disordered eating behavior and because of the commonly held belief that amenorrhea is a normal consequence of exercise (West, 1985). Athletic amenorrhea (primary or secondary) is typically classified as hypothalamic induced menstrual dysfunction, identified with abnormal hormonal levels there are likely many contributing factors including psychological stress, genetic predisposition, low body fat, and over training. Otis et al, (1997) suggests that to increase awareness risks of menstrual disorder-related exercise, it is necessary to design complete and comprehensive education programs for female athletes, their parents, their coaches, and the relevant authorities.

Anterior cruciate ligament injury occurs with a 4 to 6-fold greater incidence in female athletes compared with male athletes playing the same landing and cutting sports (Arendt & Dick, 2006). Blowing out the anterior cruciate ligament can sideline an athlete for a season—or, in the worst case, ruin a career and this type of injury often occurs in football players and skiers (Kumar & Clark, 2002). The MCL is usually injured when the outside of the partially flexed knee is struck with the foot fixed to the ground. Injury to the MCL can also occur with excessive lateral rotation of the knee (Peterson & Renstrom, 2001). This force causes the medial aspect of the knee to widen, creating a stretch, partial tear or complete tear of the ligament. An injury to the MCL may be isolated or a component of a more complex knee injury. The injuries that frequently occur in combination with MCL tears are ACL and meniscus tears. If only the MCL is injured, most patients are able to continue walking after an acute injury, however one may have difficulty with activities involving pivoting and twisting. More significant MCL tears may give one the sense of instability also have pain, stiffness and swelling in the joint, on the inner part of the knee (Joshi & Kotwal, 1999).

Trog et al, (1990) discuss that patella glide straight up and down as extension of leg causing patello-femoral syndrome. The average internal derangement of the knee, patella-femoral pain syndrome, and inflammatory injuries were significantly older than average. This can lead to pain and swelling in front of the knee and behind the kneecap with a crackling noise. To prevent pain, it's important to build up muscle endurance and strengthen the quadriceps muscles in the front of leg, also need to stretch the muscles and tendons that may be tight such as the hamstrings and the iliotibial band on the outer side of the leg and avoid activities that may aggravate the kneecap pain, such as climbing stairs, running up and down hills and squatting excessively (Hall & Brody, 1999).

The meniscus breaks down, the torn pieces can cause irritation that leads to pain and swelling on either the inner or outer side of the knee, depending on which meniscus is torn. Among 450 athletes 45% male and 68.3 % female were commonly suffer from meniscus injury (Roitman et al, 2001). In meniscus pain, ice apply to the knee and talk to athletic trainer or physician or physiotherapist about taking an anti-inflammatory medication to keep the swelling down, stretching and strengthening legs, if pain persists after long bouts of activity (Arendt & Dick, 1995).

Chronic knee pain is common in adolescent's female athletes, age 12-15, but also can plague adults. It is especially common in females with loose-jointed kneecaps. This is due to an irritation of the undersurface of the kneecap. When the knee cap is loose the undersurface will rub against one side of the knee joint when the knee bends and the cartilage surface becomes irritated, this produces chondromalacia, which is a softening of the lining (Brukner & Khan,1993). It is due to changes of the deepest layers of cartilage, causing blistering of the surface cartilage. Treatment usually involves rest of the knee, physical therapy, a good knee brace or some modification of activities. Allowing the inflammation of chondromalacia to settle is the first step of treatment. Avoiding painful activities that irritate the knee for several weeks, followed by a gradual return to activity is important. Therapy for chondromalacia involves strengthening and stretching the quadriceps the hamstrings and calves. If damage occurs to the joint lining, the damage may be permanent (Trog, 1990).

Hip extensors and abductors play role in all ambulatory activities, trunk stabilization the trunk and hip also to transfer force lower extremity to pelvis. The Anterior thigh, knee pain, lateral ankle pain is an overuse injury characterized by pain and swelling in affected area due to over exertion of muscles during weight-bearing activity and women are prone due to water retention associated with the start of a menstrual cycle. Pain or discomfort can be on the front or side of the lower leg (Nadler et al, 2000).

An athlete may first notice a pulling or vague aching sensation after running. If ignored or allowed to continue, this aching may become more intense and could occur even during walking (Evan, 1994). Causes are due to muscular imbalance, insufficient shock absorption, toe running. Conservative treatment as training, ice, compression, elevation, medications and modalities. Taping of the area and the use of orthotics will help in lower limb control, strengthening of the anterior muscles of the thigh, stretching of the muscles in the lower leg (Freddie & David, 2001).

Gould (1990) emphasized that stress fractures have two primary causes. The former occurs most often in otherwise healthy female athletes and military recruits, while the latter is likely to occur with other physical problems, such as osteoporosis. Bone mass and bone mineral density can vary widely in females due to several factors, including hormonal influences and menstrual irregularities. Estrogen progesterone level and relaxen hormone affect tissue and systemic follicular changes during menstruation (Wojtys et al, 1998). Training regimen, footwear and training surface play a role in developing a fracture. In most cases rest, with altered training, is the cure for stress fractures. Non-weight bearing exercise, such as swimming, may be prescribed so that the athlete can maintain aerobic fitness (Brukner & Khan, 1993).

According to Read, (2000) stated the plantar fascia is a wide, elastic ligamentous tissue that spends the entire bottom of the foot. This tissue can become strained from overuse, unsupportive footwear, a tight Achilles tendon or running on hard surfaces. Most often the cause of plantar fasciitis is chronic irritation. Running and jumping activities with repeated landings can make an athlete susceptible to plantar fasciitis or tendoachilis rupture. Athletes in cross-country, track and field events, basketball and volleyball are prone to this injury due to the continuous strain from running and

jumping. Ice treatments, correct shoes, shoe inserts or orthotics combined with flexibility and strength exercises can usually control, prevent or eliminate the condition prescribed by the physiotherapist (Sperryn, 1983).

Freddie et al, (2001) stated a sprained ankle is a common injury to the lower leg. If not properly rehabilitated, a sprain can become a repetitive injury. Sprains usually occur when the foot becomes inverted and plantar flexed during activities such as running, jumping or quick turning, particularly on an uneven surface. In an ankle sprain, the outer ankle ligaments may be overstretched and damaged in addition to injury to the muscles of the lateral compartment.

Ligament sprains of lower and upper extremities are treated with the conservative method. A severe sprain also involves injury to the growth plate of the bone. Complete rehabilitation of a severe ankle sprain must include balance and proprioceptive training to prevent repeated ankle sprains in the future; the rehabilitation goal is active, internal stabilization rather than passive support (Orava, 1981).

Physiotherapy has a wide spectrum role to manage or improve the athletic injury related conditions. Several studies have revealed that physical fitness is associated with dramatic reductions in all causes of mortality, while patients and physicians alike are most familiar with the positive cardiovascular affects of exercise; the benefits extend beyond the heart. Increased physical activity is associated with additional benefits such as, decreased risk of diabetes, breast cancer, and even depression (Hall & Brody, 1999). Starting a regular exercise routine in adolescence can have a huge effect on overall health status later on. It has been shown that high school female athletes who are active in sports have higher graduation rates, fewer unwanted pregnancies, and greater self-esteem than those who are not active. Physical activity positively influences almost every aspect of a young woman's health from her physiology to her social interactions and mental health (Freddie & David, 2001).

Probable Benefits of Exercise in Females: Decreased "risky" behavior including involvement with drugs, smoking and teen pregnancy, improved self image, self esteem and mental health, improved bone mineral density with decreased long term

risk of osteoporosis, improved lipid profile and control of obesity, less dysmenorrheal and premenstrual tension syndrome, improved immunity, improved glycemic control and prevention of type 2 diabetes, decreased all-cause mortality, decreased risk of coronary disease, cardiac events, and death, slower progression of early carotid atherosclerosis and a reduction in stroke risk, improved blood pressure control, decreased rate of cholelithiasis, modest protection against breast cancer, decreased disability and improved cognitive function and autonomy in older women, decreased health-related costs(Peterson & Renstrom, 2001).

Components of the Musculoskeletal Physical Exam: Inspection – look for deformity, ecchymosis, muscle atrophy, palpation – feels for swelling/effusion, tenderness, warmth. Range of motion (ROM) – test for pain/disability with both active and passive motion. Manual muscle testing (MMT) – evaluate for weakness (and pain) by resisting muscle action. Special tests – check the integrity of a specific structure (ligament, cartilage, tendon, bone) by challenging its function or by "aggravating" the structure and reproducing pain. Neurovascular tests – In acute injury, rule-out nerve and vessel damage, in overuse injuries, evaluate for associated or contributing neuropathy (Hagen, 2005).

Physiotherapy Management of injury among athletes: PRICE (Protect, Rest, Ice, Compress, Elevate) is initiated to: Minimize initial injury, decrease pain and swelling, prevent further tissue damage, and maintain flexibility, strength, and proprioception, and overall fitness during healing, functionally rehabilitate injured patient to enable return to activity, assess and correct any predisposing factors to decrease the likelihood of recurrence (Yoo et al, 2010).

Hall & Brody, (1999) suggest managing of an athletic injury by physiotherapy plays a fundamental role by deliver proficiency in the concept of preventive and curative rehabilitation for injured athletes. So it needs to begin physiotherapy as first choice of conservative treatment for Bangladeshi athletes following out of the country.

CHAPTER:III METHODOLOGY

3.1 Study design

This study has done through using cross sectional prospective survey under a quantitative study design. This methodology was chosen to fulfill the aim of the study as an effective way to collect data.

3.2 Rationale of choosing the methodology

According to Frankle & Wallen (2000), a survey is used to describe the characteristics of a population and is the way by which the number of population is described one or more variables. The purpose of the research is to ascertain the characteristics of common sports injuries occurring to female athletes during competition and at training period.

A survey research is an approach which involves collecting information from a large number of people using interviews or questionnaire, in order that an overall picture of that group can be described in terms of any characteristics which are of interest to the researcher (Hicks, 1999). This study exactly describes the same thing that the researcher wants to involve a large number of respondents to increase the adequacy of the study with relatively minimal expenditure. Samples of the study is the female athlete trainees in BKSP, Savar, Dhaka .So a prospective survey is the best for the study because this research design involved identifying the group of people which the researcher wants to study and then collecting data from the sample when in a particular services.

A cross sectional prospective survey design is chosen by the researcher because data will collect from samples at one point of time and the questions are asked retrospectively on events, sites and feelings (Bowling, 1998).Survey researches describe parameters of population and predict relationship among these characteristics (Depoy & Gitlin, 1998). This study represents same thing because the researcher will use the method to describe the relationship female athletes' injury rate and its severity according to the variables.

3.3 Sample selection

3.3.1 Study area

The study was conducted at Bangladesh Krira Shikkha Protisthan, savar, Dhaka. Researcher chosen this organization as study area because this is the only institute which aims to find out the promising sports talents among young boys and girls in our country to provide adequate facilities and opportunities for their intensive training. And this institute directly conducted by the ministry of youth and sports.

3.3.2 Study population

The study population was female athlete who trains in BKSP. There are a small number of related studies and resources available about injuries of female athletes in a Bangladeshi context. However large numbers of international studies have been done on this topic. So till now, Bangladesh is behind in addressing comparison to other countries about female athlete's fitness, various injuries and the physiotherapy management. So, researcher thought to run the project study among female athletes.

3.3.3 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= 0.25 (Here P=Prevalence and P=20 %)

q= 1-p

=1-0.20

=0.80

d= 0.05

According to this equation the sample should be more than 246 people but due to lack of accessibility and time the study was conduct with 99 female athletes by purposive sampling.

3.3.4 Sampling technique

Ninety-nine participants with athletic injury were selected through purposive sampling technique from BKSP. Participants were select from BKSP because they were easily accessible for the researcher. Researcher has taken data from the patients purposively. In research participants were chosen purposively because participants had some particular features of characteristics which will enable detailed exploration of the research objective (Purposive sampling 2008). 99 samples were selected following the inclusion and exclusion criteria.

3.3.5 Inclusion criteria

- Only injured female trainee of BKSP.
- Trainee who had sports related soft tissue injury.
- Age group: no specific age group.

3.3.6 Exclusion criteria

- Female athletes those who are not injured.
- Athletes who are not willing to participants

3.4 Data collection procedure

A developed structured questionnaire was used after reviewing literature for asking to the participants. English Questionnaire was used for the study. The whole questionnaire was described to the participants as required, because all of them are educated enough to understand the language of the questionnaire. In the questionnaire participant's socio-demographic information including age, level of education, training age, health and history including their injury was asked.

3.5 Method of data collection

3.5.1 Height measurement

Height was measure using a wall scale. A standard measuring tape was fixed on the wall vertically with the 0 point placed at the floor. Subject stood in front of a wall facing directly ahead with arms hanging freely on sides and both feet kept together. Shoes were taken off. In order to prevent leaning forward or backward, subjects'

heels, buttocks and upper back were kept in contact with the wall. Position of the highest point of the head was noted on wall using a scale. Subjects were asked to look straight forward and to keep the zygomatic process horizontally so that neck or head flexion or extension did not affect the position of the vertex. The height of the subject was measured in meters.

3.5.2 Weight measurement

Weight was measured by using a standard analogue weighing machine. At first the machine was checked for any mechanical fault. The participant stood on the machine with minimum movement. They were instructed to stand erect to keep both hands hanging on side and wear minimal clothing without any shoe. Reading was taken when the indicator of the machine became steady. Reading was taken in kilogram.

3.5.3 BMI calculation

A standard electronic calculator was used to do the calculations.

Body mass index (BMI) = Weight in Kg/ (Weight in meter)^2

According to WHO, (2011) stated that, measurement scale of BMI

Category	**BMI range(Kg/m^2)**
Under weight	Less than 16.5
Normal	From 18.5 to 24.9
Overweight	From 25 to 30

Table 2: Measurement scale of BMI

3.6 Data Analysis

Data was analyzed with the software named Statistical Package for Social Science (SPSS) version 16.0. And descriptive statistics was use to analyze data because a descriptive statistics refers methods of describing a set of results in terms of their most interesting characteristics (Hicks, 1999). Chi square test was use to ascertain the significance of value. The variables were labeled in a list and a researcher was establishing a computer based data record file. And after calculation; data was

presented by using bar graph, pie chart and table by using Microsoft Office Excel 2007.

3.7 Informed consent

Written consent was give to all participants prior to completion of the questionnaire. The researcher was explained to the participants about her role in this study. The researcher received a written consent form every participants including signature. So the participant was assuring that they can understand about the consent form and their participation will on voluntary basis. The participants were informed clearly that their information kept confidential. It was explained that there might not a direct benefit from the study for the participants. Information from this study was anonymously code to ensure confidentiality and not personally identified in any publication containing the result of this study.

3.8 Ethical Consideration

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.

3.9 Rigor

All the steps of research were sequentially followed and conducted in systemic way. During data collection and analysis the researcher avoided influencing the whole process by her own perspective, values and biases. The researcher never influenced the participants by her own perception during data collection. Biasness was avoided during data analysis and data was analyzed by following a systematic scientific way.

3.10 Limitation of the study

The expected sample size was 246, and the total number of female athlete trainee in BKSP is 120. Due to resource constrain researcher was elect to choose just 99 samples which is very small to generalize the result in all over the Bangladesh. There are a few literatures found about injury among female athletes of Bangladesh so it is difficult to compare the study with the other research. In this study only BKSP was the study area to generalize for wider population. The questionnaire was developed only through searching sufficient literature but considering the context of the demography of the population a pilot study would substantial before developing questionnaire.

CHAPTER: IV RESULTS

The purpose of the study was to find out the prevalence of common injury among female 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.

Age

The pie chart shows, among 99 participants the highest number of injured participants 58% (n=57) were found in the age group- greater than or equal 15 years this group includes 15-20 year trainees and 41% (n=42) participants were in the group of less than or equal 14 years and their age range was 10-14 year.

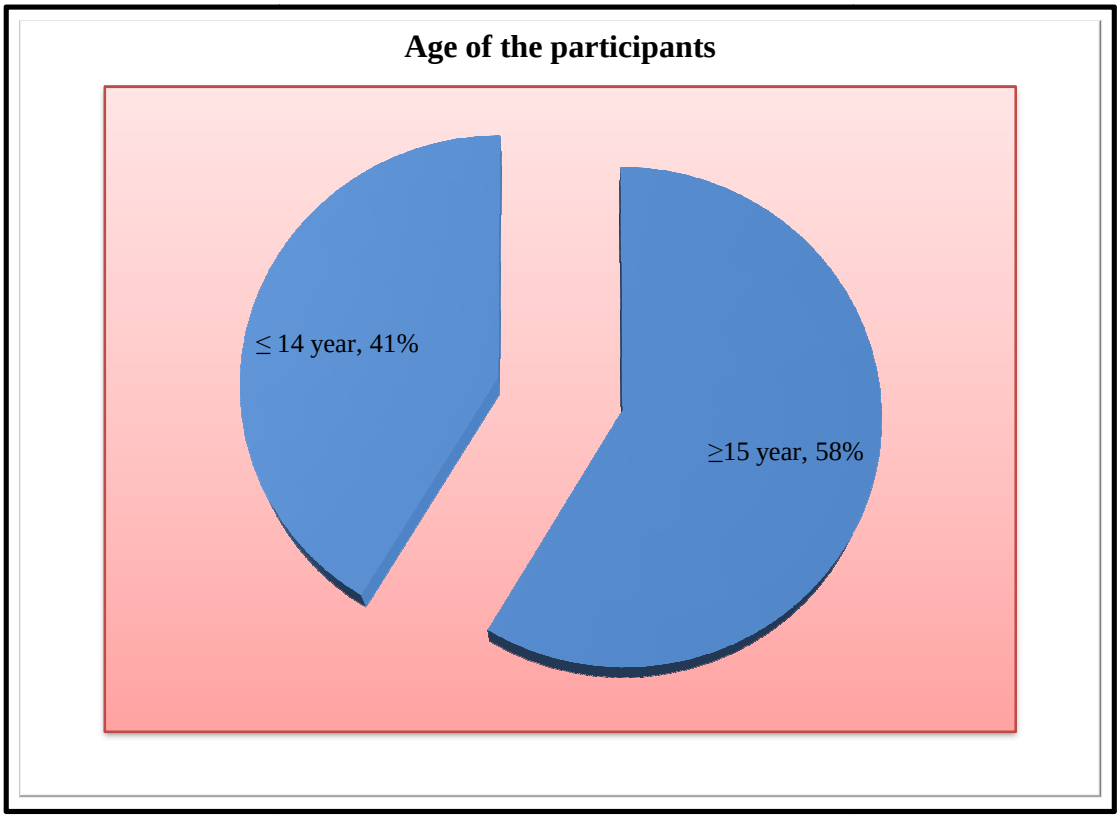

Figure 1: Age of the participants

Training event

The bar graph shows that the highest number of injured participants 20.20 % (n=20) are cricket trainee, in swimming and running equal percent 15.20 %(15) of injured trainee, in gymnastics 13.10 % (n=13), 11.10% (n=11) percent injured trainee are trainees in tennis, in shooting and judo again equal 8.10% (n=8) number of injured trainee present and 9.10% (9) number of injured trainee who trains in archery.

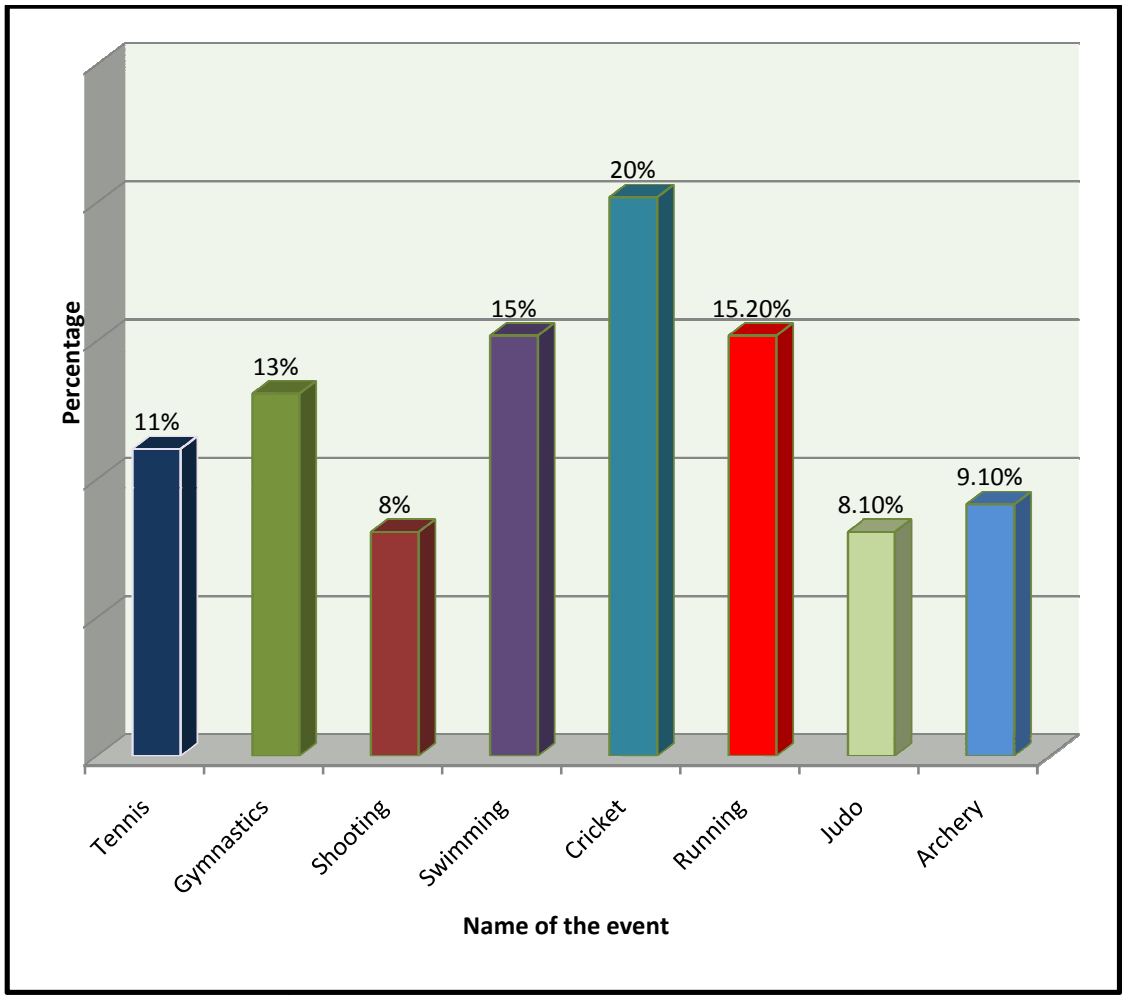

Figure 2: Training events of injured participants

Duration of training

Among the 99 participants who are injured, in this bar graph higher number of injured participants undergo less than or equal 5 year 51% (n=50) and 48% (n=49) duration of training is greater than 6 years.

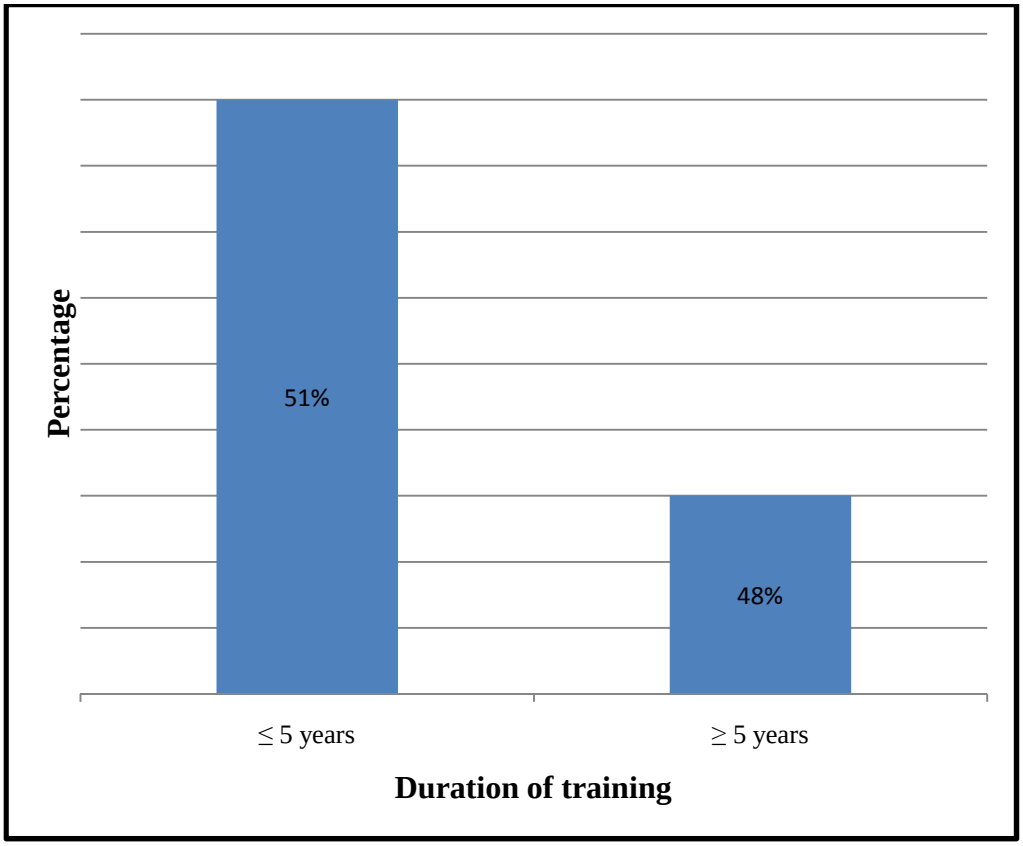

Figure 3: Duration of training among injured trainees

Education level

The pie chart shows, higher rate of injured athletes 39% (38) educational background is in Secondary school Certificate,29% (n=29) were in level of Junior School Certificate,21% (21) in Higher School Certificate level,10% (11) injured trainees undergo Primary School Certificate level and only 1% were in Graduation level at Bangladesh Krira Shikha Protisthan.

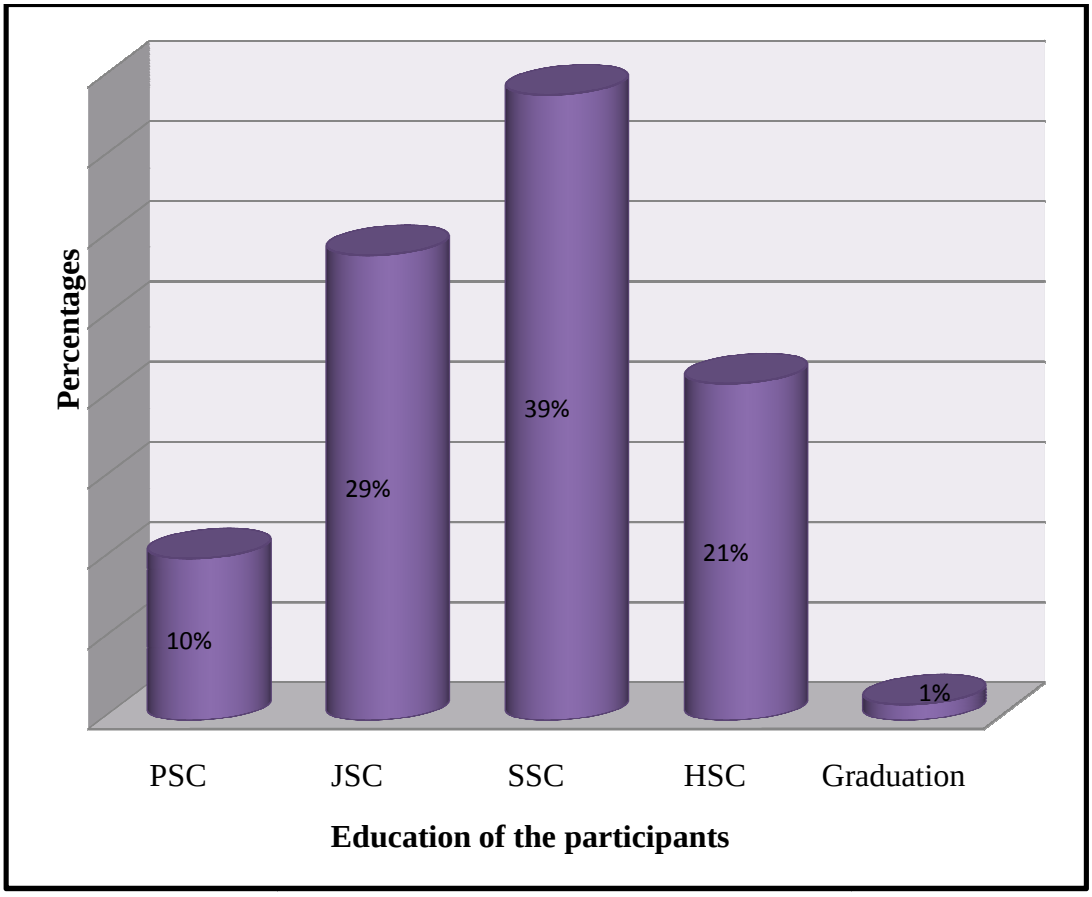

Figure 4: Educational level of the participants

Health related characteristics

This table shows frequency of health related character of all participants. Among 99 participants BMI found 4% underweight, 88% normal weight, 8% overweight. Higher number 91%.Peak heart rate of the participants is ≤ 72 beat/min and higher 87% participants have normal curvature. Maximum participants (55%) flexibility rate is ≥ 15 cm, only 33% have eating disorder and 23% suffer from menstrual disturbance.

Area	*Number (%)*
BMI	
Underweight (<18.5)	4(4%)
Normal (18.5-24.9)	88(88%)
Overweight (25-29.9)	8(8%)
Heart rate	
≤ 72 beat/min	91(91%)
≥ 73 beat/min	8(8%)
Posture	
Lordosis	5.1(5%)
Kyphosis	7.1(7%)
Normal curvature	87(87%)
Flexibility	
≤14 cm	44(44%)
≥15 cm	56(55%)
Eating disorder	
Present	33(33%)
Absent	66(66%)
Menstrual disturbance	
Present	23(23)
Absent	76(77%)

Table 3: Health related characteristics of the participants

Injury of the participant

Among all 99 participant higher number 19 % (n=19) participants injured by ankle sprain and shoulder pain, 15% (15) had neck pain, elbow pain and toe fracture 9% (9),knee ligament injury 7% (7),meniscus injury and posterior thigh pain 5% (5),back pain 7% (7)upper limb fracture 4% (4),lower limb fracture 1% (1).

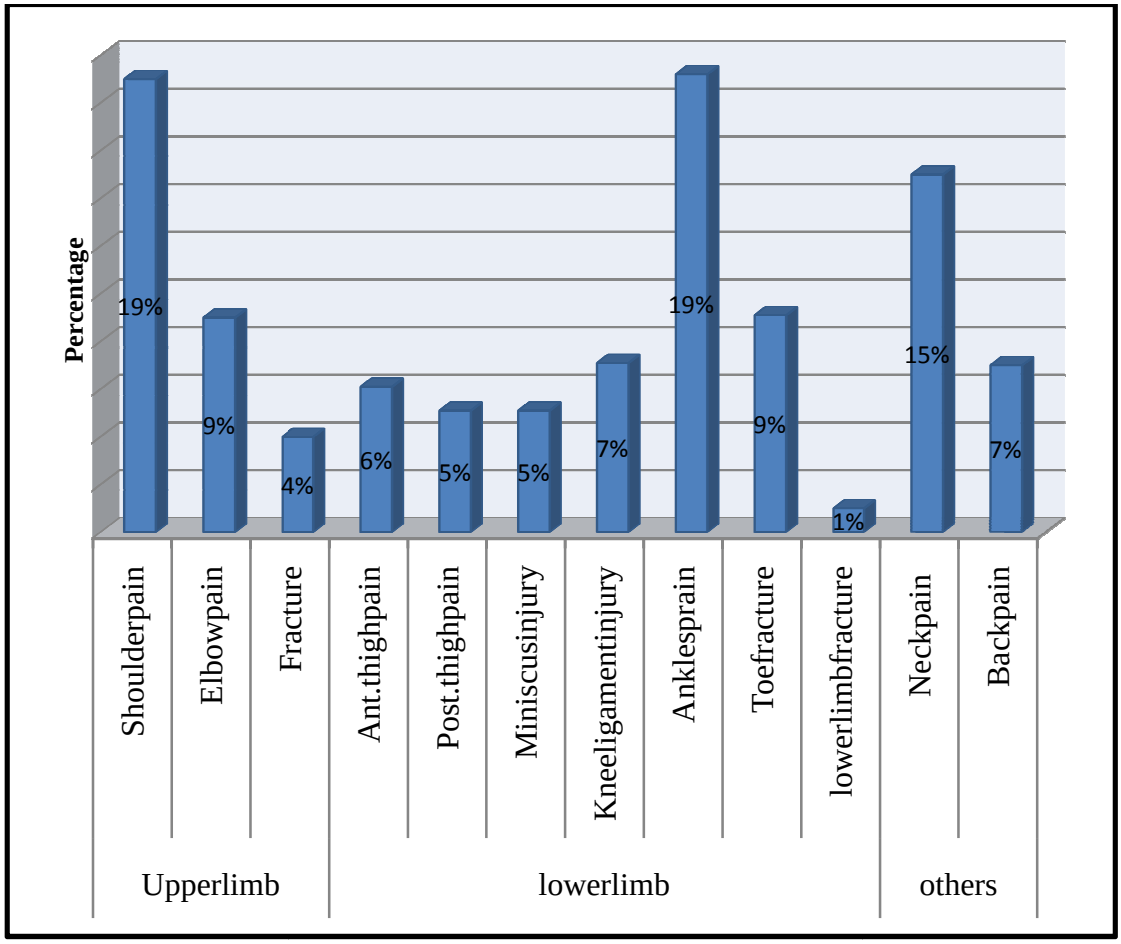

Figure 5: Participants site of injury

Type of injury

Participants of Bangladesh Krira Shikha Protisthan were most commonly affected by overuse injury 52 % (52) and others were affected by direct injury 47% (47).

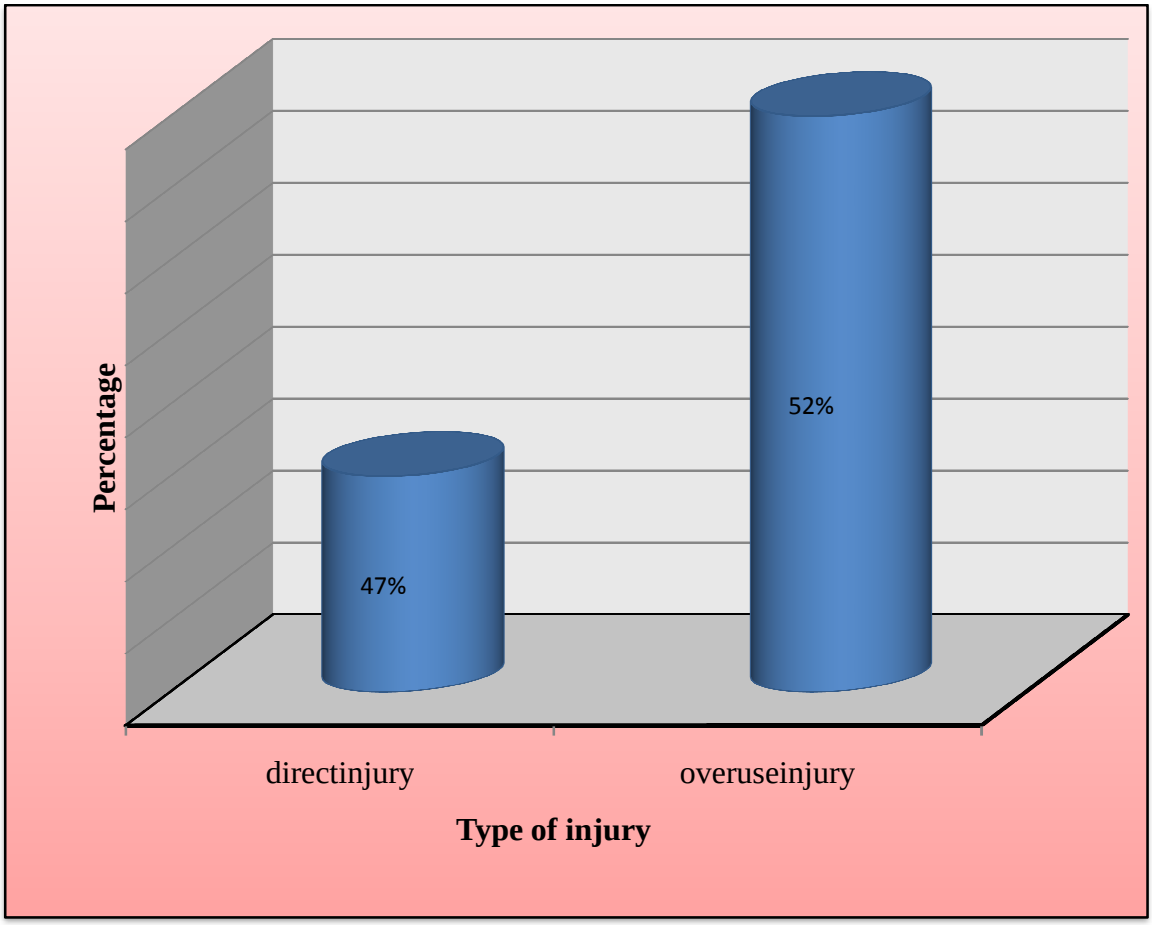

Figure 6: Type of injury of the participant

Recurrence of injury

The bar graph indicates, among all the participants' 50% (n=50) have history of recurrence and 49% (n=49) not.

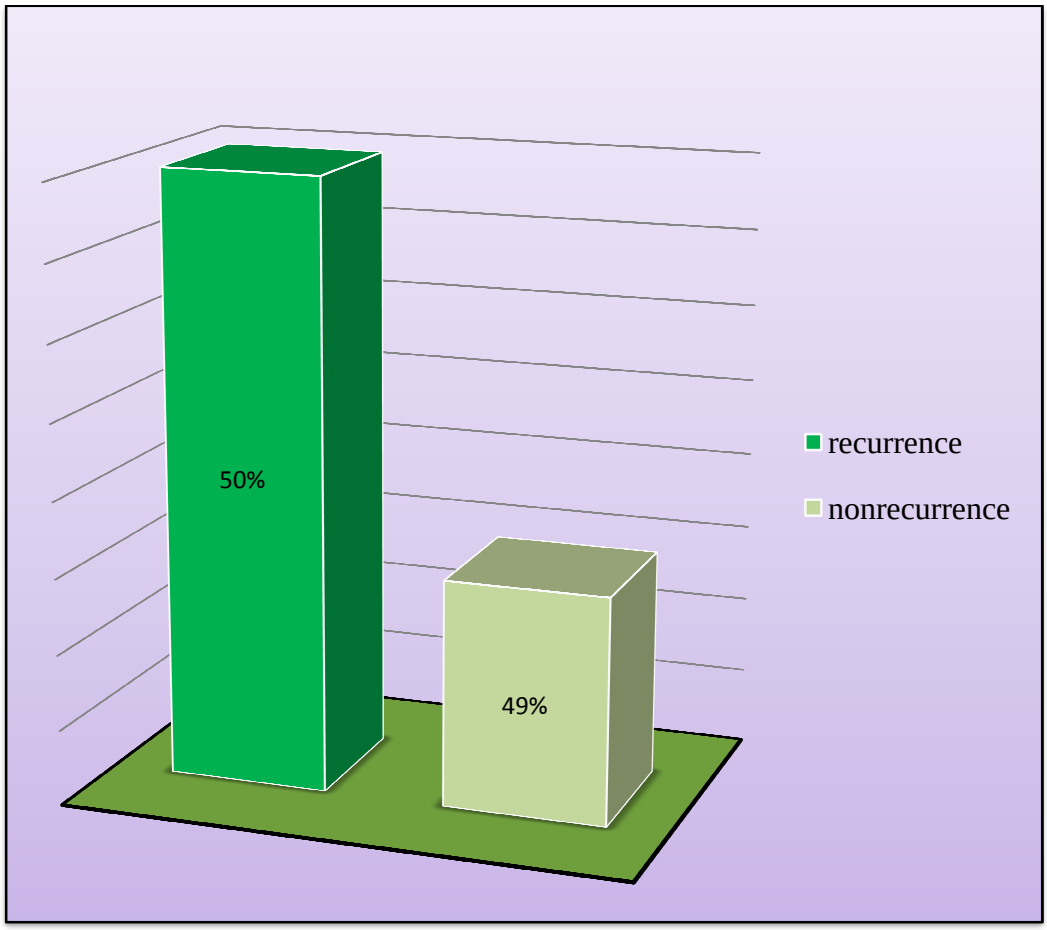

Figure7: Percentage of recurrence among the participant.

Warm up cool down activity of the participants

Among 99 participants 97% (97) were regularly attend in warm up and cool down activity.

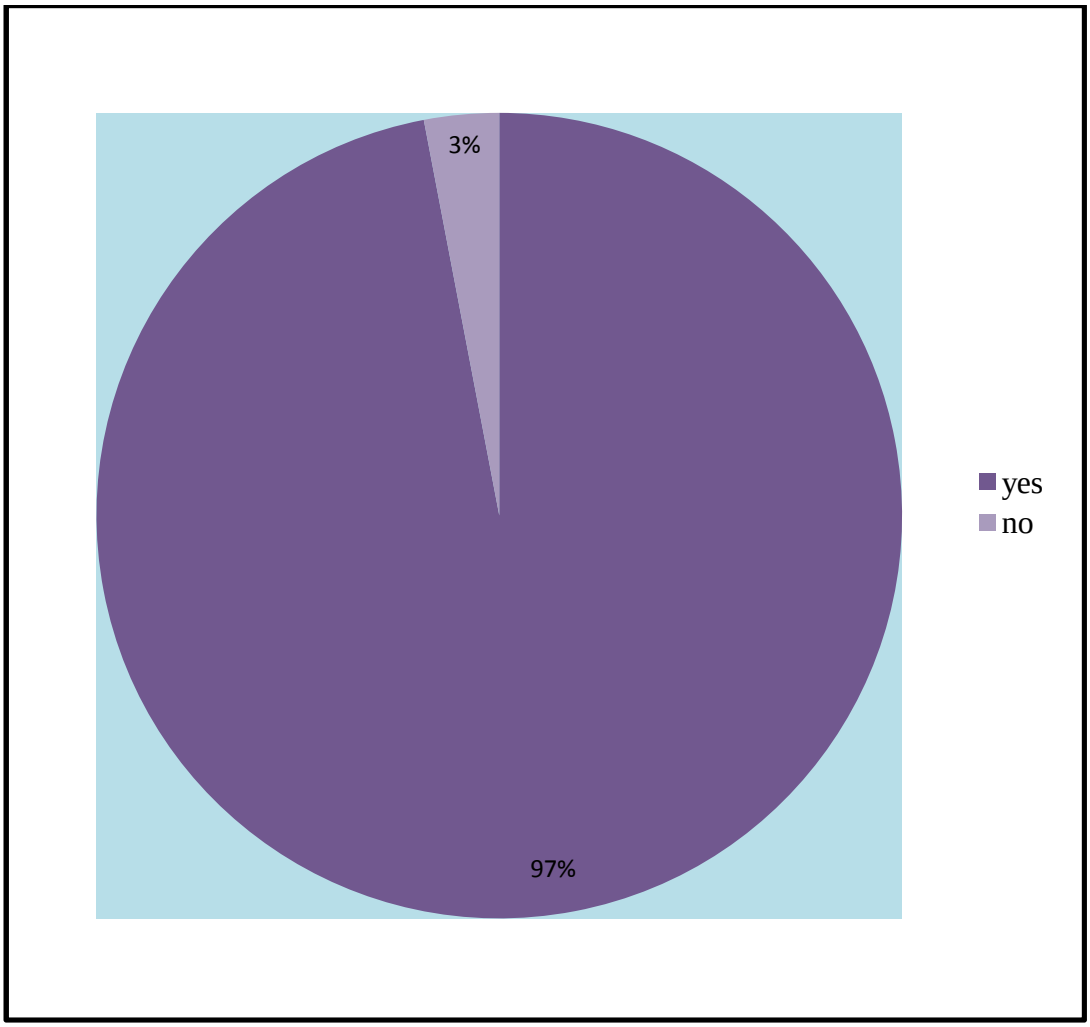

Figure 8: Warm up and cool down activity of the participant

Duration of warm up and cool down

The elevated number of participants' 65% (n=65), duration of warp up and cool down activity were more than or equal 16 min and 34% (34) were under duration of less than or equal 15 min.

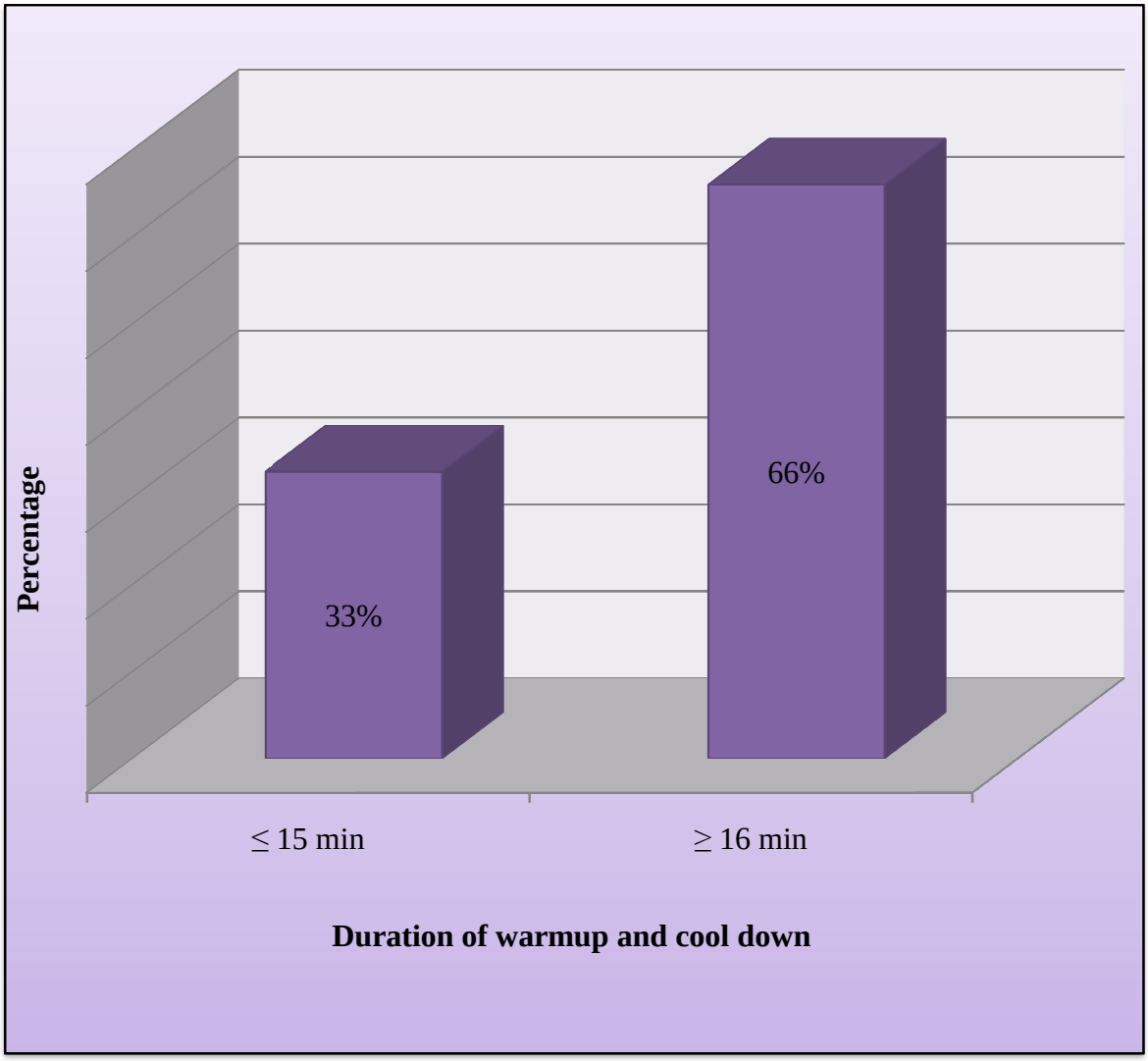

Figure 9: Duration of warm up and cool down

Treatment taken by the participants

The participants were mostly 39% (33) taken drug as treatment after injury, 33% (33) participants have taken physiotherapy, 27% (27) both drug and physiotherapy.

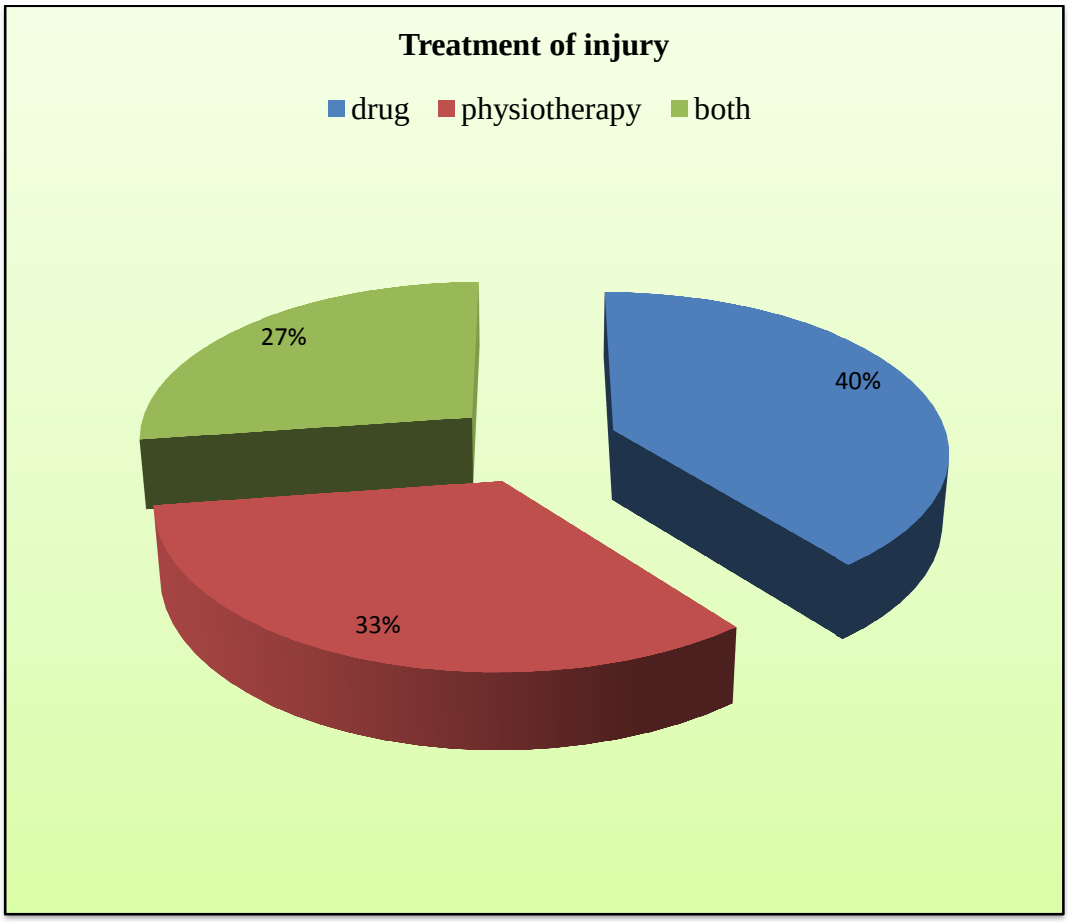

Figure 10: Treatment of injured participants

Association between participants training age and severity of injury

		recurrence of injury		
		yes	no	Total
Duration of training	less than or equal 5 year	28	22	50
	greater than or equal 6 year	22	27	49
Total		50	49	99

Table 4: Association between participants training age and severity of injury

Fifty participants who have trained less than or equal 5 years had higher injury rate, among them 26 participants overuse injury and 24 were directly injured. Consequencelly other participants trained greater than or equal 6 year have 26 overuse and 23 participants were directly injured.

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.220	1	0.269		
Continuitycorrection	0.817	1	0.366		
Likelihood Ratio	1.223	1	0.269		
Fisher's Exact Test				0.317	0.183
Number of Valid Cases	99				

Association between participants BMI and type of injury

		Type of the injury		
		direct injury	Overuse injury	Total
BMI of the participant	underweight	0	4	4
	normal	42	45	87
	overweight	5	3	8
Total		47	52	99

Table 5: Association between participants BMI and type of injury

Among the 99 participants the higher rate of 87 undergo normal weight in whom 45 participants have overuse injury and 42 participants have direct injury, 8 participants have overweight found have 5 direct injury and 3 overuse injury and a few 4 participants found under weight who have overuse injury.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.362	2	0.113
Likelihood Ratio	5.901	2	0.052
Number of Valid Cases	99		

Association between participant's flexibility and severity of injury

		Severity of injury			
		mild	moderate	severe	
Flexibility	less than or equal 14	8	23	13	44
	greater than or equal 15	6	30	19	55
Total		14	53	32	99

Table 6: Association between flexibility and severity of injury

Among all 99 participants according to flexibility (Seat and reach test), 44 participants who have flexibility rate -less than or equal 14 cm have higher percentage of injury- 23 moderate injury, 13 have severe and 8 have mild injury. And 55 participants have flexibility greater than or equal 15 cm where 19 participants have severe, 30 moderate and 6 participants have mild injury.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.127	2	0.005
Likelihood Ratio	1.121	2	0.071
Number of Valid Cases	99		

Association between menstrual disturbance and injury type

		Injury		
		direct injury	Overuse injury	
Presence of menstrual disturbance	yes	10	13	23
	no	37	39	76
Total		47	52	99

Table 7: Menstrual disturbance and injury type

It was found that the 23 participants have menstrual disturbance among total cases (99) that have overuse injury in 13 participants and 10 participants have direct injury.

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	0.019	1	0.0 61		
Continuity Correction	0.040	1	0.042		
Likelihood Ratio	0.192	1	0.061		
Fisher's Exact Test				0.0812	0.042
Number of Valid Cases	99				

CHAPTER:V DISCUSSION

In this study age group of injured participants was higher 57 (58%) who were in 15-20 age range and 42 (41%) participants were in the range of 10-14 years. A study was done in 350 female athletes were found 80% of female who play sports get hurt at the age range of 12-15years, and about 86% female athletes were at the age range of 16-19 and their injuries are classified as serious(Petrie, 1993). So, female athletes over 15 years are vulnerable for incidence of injury.

The highest number of injured participants 20% were cricket trainee, in swimming and running equal percent 15 % of injured trainee, in gymnastics 13%, 11% injured trainee are trains in tennis, in shooting and judo again equal 8% number of injured and 9% of injured trainee present who trains in archery. A study named 'Exertion injury of female athlete' that most participants, 48.5% number of injury occur in track and field events which includes running, long ,jump, high jump and skipping,12.8% injury occur in jogging, 3.6% in gymnastics, 3.2% in swimming, shooting 2.1% (Orava et al, 1981).

Among the 99 participants who are injured, in this study higher number undergo less than or equal 5 year 51% and 48% 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 female athlete. The elevated number 65%, participants duration of warp up and cool down were more than 16 min and 33.3% 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 (Gilchrist et al, 2008). As mentioned by Roitmen et al.(2001) in Sex-Related Injury Patterns Among Selected High School Sports- percentage of shoulder/arm injury (16.3%), hip/thigh/leg injury (18%), ankle/foot injury (14.8%), knee injury (10.8%), face/scalp (8%), trunk injury (6%), head/neck/spine injury (3.2%), injury of forearm/wrist/hand (22.9%) .Whereas in this study among all 99 participant higher number 19 % of participants injured by ankle sprain and shoulder pain, 15% had neck pain, elbow pain and toe fracture 9% ,knee ligament injury 7%, meniscus injury and posterior thigh pain 5.% ,back pain 7% upper limb fracture 4%

,lower limb fracture 1% . The performance of female athlete may differs due to individuals' age, fitness, weight, height, BMI, heart rate, posture, eating disorder, menstrual disturbance etc.

This study shows, higher rate of injured athletes' 39% educational background is in Secondary school Certificate, 29% were in level of Junior School Certificate, 21% in Higher School Certificate level, 10% injured trainees undergo Primary School Certificate level and only 1% were in Graduation level at Bangladesh Krira Shikha Protisthan. The National Federation of State High School Associations data shows that between 1988 and 1998 participation in girls' high school sports has risen, nearly 40% of the female participants were below graduation level (Powell, 2000).

Participants of Bangladesh Krira Shikha Protisthan were most commonly affected by overuse injury 52.50 % (*N*=52) and others were affected by direct injury 48% (*N*=47). And in all the participants' history of recurrence 51% is higher than non recurrence 48%. Orava & Puranen (1978) found that in Finland, the majority of women athletes' overuse injuries occur to adolescents with 45% recurrence and about 45% of occurred to girls, but only 9.5% among the older athletes.

In all 99 participants according to test of flexibility (Seat and reach test), less flexibility rate -less than or equal 14 cm have higher percentage of 53% (*N*=53) moderate injury, 32% (*N*=32) have severe and 14% (*N*=15) mild injury. In a survey of adolescent athletes ratio between flexibility and athletic injury among 320 female athlets 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, 1996).In this study underweight 4%, normal 87%, overweight 8%. This study also shows that the participants which was statistically non significant(x2=, df= 2, p >0.05) at 5% significant level. Participants who have menstrual disturbance 23%, were affected by overuse injury in higher number 13% and 10% direct injury occur which was found statistically significant(**x2=**, df=1, p< 0.05) at 5% significant level. An experimental study explore that there were more injuries during the ovulatary phase of women with regular cycles (days 10 to 14) than expected 8% injuries direct; 29% observed, 18% expected rate. In contrast, significantly fewer injuries occurred during the follicular phase (days 1 to 9)

their 45 injuries; 13% overuse, 32% direct (Edward, 1998). So it indicates that menstrual disturbance is one of the factors which may increase injury rate. The participants were mostly 39% taken drug as treatment after injury, 33% both, 27% only physiotherapy. As mentioned by Freddie, (2001) female athletes among 1200 trains in England National Federation of Athletics have taken physiotherapy 84% after injury and 26% took conservative or surgical treatment. The differences of treatment ratio between these two studies occur due to different sample size and socio-demographic characteristics.

CHAPTER:VI CONCLUSION

Bangladesh Krira Shikha 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 female athletes is fewer than abroad. The result of the study indicates participants of Bangladesh Krira Shikha Protisthan were most commonly affected by overuse injury rather than direct injury. Variation in anatomical body structure (height, weight) and fitness (BMI, flexibility) and training duration are the primary factors of their injury, shoulder and ankle is the frequent injured site. One area has been identified through the study, the recurrence of injuries in female athletes influence by variations in menstrual disturbance and eating disorder. The study indicates lower flexibility rate is 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 over 15 year and cricket is the most vulnerable sporting event. Trainees are highly dependent on drugs rather than physiotherapy after injury.

The researcher proposed the following recommendation to certain authority and personnel to prevail over limitation: In BKSP the total number of female athlete is 120, limit of sample size researcher did not gather total participants and use purposive sampling; consequently the result cannot be generalized in all over the Bangladesh. 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 female athletes, characteristics of athletic injury and factors associating injury in female athletes. In this study only prevalence of injury identified it can be more specified if and effectiveness of physiotherapy treatment also done among female athletes which might be play an vital role in improving the professional efficacy.

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Appendix

Informed consent

(Please read out to the participant)

Assalamualaikum/Namasker, my name is *Naima Tanveen*, I am conducting this study for a Bachelor project study titled "Common injuries among female athelets trains in Bangladesh Krira Shikkha Protisthan" from Bangladesh Health Professions Institute (BHPI), University of Dhaka. I would like to know about some personal and other related questions about neck pain & cervical spondylosis. This will take approximately 20 - 30 minutes. I would like to inform you that this is a purely academic study and will not be used for any other purpose. The researcher is not directly related with this area BKSP, so your participation in the research will have no impact on your present or future training in this area (BKSP). 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 anonymous. 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 to answer during interview.

If you have any query about the study or your right as a participant, you may contact with Naima Tanveen, researcher and/ or Md. Rezaul Karim, Lecturer, BHPI, Department of Physiotherapy, CRP, Savar, Dhaka-1343.

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

YES ☐ NO ☐

Signature of the Attendance……

Signature of the Interviewer……

"Common injuries among female athletes trains in Bangladesh Krira Shikkha Protisthan"

Questionnaire

Id no:	
Name:	Address:
Mob no:	

Part 1: Sociodemographic Questions

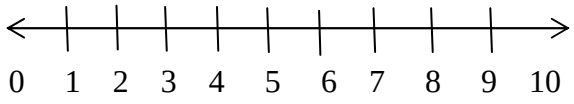
SL No.	Questions	Responses
1.	Age	_____yrs
2.	Education	Primary School Certificate (PSC)= 1 Junior School Certificate (JSC)= 2 Secondary School Certificate (SSC)= 3 Higher Secondary Certificate (HSC)= 4 Other (Specify)= 5
3.	Training event	Archery= 1 Running= 2 Cricket= 3 High Jump= 4 Long Jump= 5 Swimming= 6 Shooting= 7 Gymnastic= 8 Tennis= 9 Other (Specify)=10
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
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.	Heart rate	_____beat/min
9.	Posture(Plam line scale)	Lordosis=1 Kyphosis=2 Scoliosis=3 Normal curvature=4
10.	Flexibility(Sit and Reach test)	_____cm
11.	Presence of eating disorder	Yes=1 No=2
12.	Duration of eating disorder	_____dd /____mm /_____yy
13.	Presence of menstrual disturbance	Yes=1 No=2
14.	Duration of menstrual disturbance	____dd /____mm /_____yy

Part 3: Injury related questions

SL NO	Questions	Responses

15.	Name of injury	Neck pain=1 Shoulder pain=2 Elbow pain=3 Anterior thigh pain=4 Posterior thigh pain=5 Fracture of upper limb=6 Meniscus injury=5 Knee ligament injury=7 Fracture of lower limb=8 Ankle sprain=9 Great toe and/or other toe fracture=10 Tendonachilis rupture=11
16.	Type of injury	Direct(Traumatic)=1 Indirect(Overuse)=2
17.	Severity of injury	Mild=1 Moderate=2 Severe=3
18.	Nature of pain (According to VAS scale)	 0 1 2 3 4 5 6 7 8 9 10
19.	Recurrence of injury	Yes=1 No=2
20.	How times	_____times
21.	Warm up & cool down activity	Yes=1 No=2
22.	Duration of warm up & cool down	_____ Min
23.	Treatment	Drug=1 Physiotherapy=2 Both drug &physiotherapy=3
24.	Improvement	<u>Drug</u> No Improvement =1 50% Improvement=2 75% Improvement=3 100% Improvement=4 <u>Physiotherapy</u> No Improvement =1 50% Improvement=2 75% Improvement=3 100% Improvement=4 <u>Both drug &physiotherapy</u> No Improvement =1 50% Improvement=2 75% Improvement=3 100% Improvement=4

Permission letter(Bangla)

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)
(The Academic Institute of CRP)

Ref:

Date : ২৫.০৭.২০১২

প্রতি
মহাপরিচালক
বিকেএসপি।
ঢাকা

বিষয় ঃ রিসার্চ প্রজেক্ট (dissertation) 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 ফিজিওথেরাপী 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 ফিজিওথেরাপী কোর্সের ছাত্রী নাইমা তানভিন তার রিসার্চ সংক্রান্ত কাজের তথ্য সংগ্রহের জন্য আপনার সুবিধামত সময়ে আপনার প্রতিষ্ঠানে সফর করতে আগ্রহী। তার রিসার্চ শিরোনাম "Common injuries among female athlete's trainees in Bangladesh Krira Shikkha Protisthan."

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

ধন্যবাদান্তে

মোঃ ওবায়দুল হক
সহকারী অধ্যাপক ও কোর্স-কো অর্ডিনেটর
ফিজিওথেরাপী বিভাগ
বিএইচপিআই।

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ, ফোনঃ ৭৭৪৫৪৬৪-৫, ৭৭৪১৪০৪, ফ্যাক্সঃ ৭৭৪৫০৬৯
CRP-Chapain, Savar, Dhaka-1343, Tel: 7745464-5, 7741404, Fax: 7745069, E-mail: contact@crp-bangladesh.org; Website: www.crp-bangladesh.org
BHPI-Mirpur Campus, Plot-A/5, Block-A, Section-14, Mirpur, Dhaka-1206, Bangladesh, Tel: 8020178, 8053662-3, Fax: 8053661

Permission letter from BKSP(Bengali)

"দু'টি সন্তানের বেশি নয় একটি হলে ভাল হয়"

বাংলাদেশ ক্রীড়া শিক্ষা প্রতিষ্ঠান
জিরানী, সাভার, ঢাকা।
www.bkspbd.org

স্মারক নং-৩৪.০৪.০২০০.০০১.০০.৬২১.১২- ৭৬৬ তারিখ ঃ ৩০ শ্রাবণ, ১৪১৯ বঙ্গাব্দ
১৪ আগস্ট, ২০১২ খ্রিষ্টাব্দ

প্রেরক ঃ পরিচালক (প্রশাসন ও অর্থ)
বাংলাদেশ ক্রীড়া শিক্ষা প্রতিষ্ঠান
জিরানী, সাভার, ঢাকা।

প্রাপক ঃ জনাব মোঃ ওবায়দুল হক
সহকারী অধ্যাপক ও কোর্স-কো অর্ডিনেটর
ফিজিওথেরাপী বিভাগ
বাংলাদেশ হেল্‌থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
সিআরপি-চপাইন, ঢাকা-১৩৪৩।

বিষয় ঃ রিসার্চ প্রজেক্ট (Dissertation) এর জন্য বিকেএসপি পরিদর্শন ও তথ্য সংগ্রহ প্রসঙ্গে।

সূত্র ঃ ২৫/০৭/২০১২ খ্রিঃ তারিখে দাখিলকৃত আপনার আবেদনপত্র।

উপর্যুক্ত বিষয় ও সূত্রের প্রেক্ষিতে জানানো যাচ্ছে যে, বিএইচপিআই'র ৪র্থ বর্ষের বিএসসি ইন ফিজিওথেরাপী কোর্সের ছাত্রী নাইমা তানভিন-এর Common injuries among female athlete's trainees in Bangladesh Krira Shikkha Protishtan সংক্রান্ত রিসার্চ কাজের তথ্য সংগ্রহের জন্য বিকেএসপি পরিদর্শনের অনুমতি প্রদান করা হল।

ধন্যবাদান্তে,

২৪/০৮/১২
(ড. মোঃ আশরাফুল ইসলাম)
পরিচালক (প্রশাসন ও অর্থ)
বিকেএসপি।
E-mail: bksp1983@yahoo.com

অনুলিপি সদয় অবগতি ও কার্যার্থে ঃ

১। মহাপরিচালক, বিকেএসপি (সদয় অবগতির জন্য)।
২। অধ্যক্ষ, বিকেএসপি।
৩। পরিচালক (প্রশিক্ষণ) অ. দা., বিকেএসপি।
৪। উপ-পরিচালক, ক্রীড়া বিজ্ঞান বিভাগ, বিকেএসপি।
৫। সিনিয়র কোচ (এ্যাথলেটিক্স), বিকেএসপি।
৬। মেডিক্যাল অফিসার, বিকেএসপি।
৭। নিরাপত্তা কর্মকর্তা, বিকেএসপি।
৮। সংশ্লিষ্ট নথি।

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