

COMMON INJURIES AMONG WOMEN CRICKET PLAYERS IN BANGLADESH

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

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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 WOMEN CRICKET PLAYERS IN
BANGLADESH**

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Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistake is 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 of my supervisor.

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Acronyms

ACL	Anterior cruciate ligament.
BCB	Bangladesh Cricket Board.
BHPI	Bangladesh Health Professions Institute.
BKS	Bogura Krira Sangostha.
BKSP	Bangladesh krira Sikkha Protisthan.
BMRC	Bangladesh Medical Research Council.
CRP	Centre for Rehabilitation for the Paralyzed.
IBR	Institutional Review Board
PCL	Posterior cruciate ligament.
SPSS	Statistical Package for the Social Sciences.

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Abstract

Purpose: To find out the common sports injuries among the women cricket players in Bangladesh. *Objective:* To find out the percentage of common injuries among woman cricket player; to check out the nature of injuries and vulnerability of injury and to identify which body part of the body is being more injured and the nature of management. *Methodology:* A quantitative cross-sectional study design was chosen to accomplish the objectives of the study. Fifty seven subjects were selected through convenience sampling procedure from the injured women cricket player in BCB, BKS and BKSP by sing a structural questionnaire to collect data. *Results:* Out of the 57 participant the mean age was 19.14 (± 3.41) years and the age range is (13-28) years. And the regional distribution of injury was Head and Neck was 59.65%, Elbow 36.84%, Wrist 80.70%, Hand and Finger 31.57%, Shoulder 84.21%, Spine, back and Trunk 57.89%, Hip and Thigh 94.73%, Ankle and Foot 91.00% and Hip, Ankle and Knee and Shoulder region was more vulnerable for injury and ankle was frequently being injured. The finding also reflects that the treatment was consisting only medication, Physiotherapy and combine therapy (both medication and physiotherapy) 19.3% (n=11) taken only medication, 15.8%(n=9) taken Physiotherapy and 64.9% (n=38) taken combine therapy and Physiotherapy was the most popular and effective treatment option or the participant and the percentage was 49.1% (n=28) among the 57 subject. *Conclusion:* Cricket demands the greater physical effort for playing during their vital stage in carrier. In this study showed that hip and thigh, knee, and ankle, shoulder in the more injury risk, so it is necessary to take very careful steps to prevent this injury and applied physiotherapy treatment option as it seems to most popular and effective to the participant.

Key words: Cricket injuries, Women cricket player.

1.1 Background

Cricket is one of the most popular team sports (Orchard et al., 2002); it also called the world's major team sports (Orchard et al., 2005). Cricket is regarded as a leisurely, gentlemen game (Zaman, 2012). In cricket bowler deliver a hard ball at a high speeds, directly to the batsman (Ranson et al., 2013). Now cricket is played in more than sixty countries and regarded as major international team sports. Cricket also played in many commonwealth countries as popular sports and it also enjoyed by players of all levels of ability (Lee, 2012).

In 1861 Cricket has been first taking place (Zaman, 2012). It is quite impossible to say, that when women tried their first hand at this manly game although the origins of cricket itself are equally ill-defined. No records has found about women cricket match until 1745 and after three years of that the first women cricket match was played in the Artillery Ground and in the eighteenth century both sexes gambled freely in cricket area (Keer, 1952). In 1926, The Women Cricket Association was formed and women played their first test cricket match which was held between England and Australia (Rheinberg& Sharpe, 1952).

Now a day's sports people are wanted to train for longer period and harder in nature. Cricket is modern sports and is no exception. Because of the repetitive nature of the game the demands placed on the cricket are increased day by day. In 1970 s the demands of cricket was regarded as a sport of "moderate injury risk" have change to players are susceptible to a wide variety of injuries at vital stages of the season (Stretch, 2003). In recent years the community interest in sporting activities has been increased and the reason of this increased interest has to be considered that the increased availability of leisure time and also improve their thought that, general health can be enhanced by improved physical fitness. And with this the rate of injuries of sports injuries are also increased. There are numerous epidemiological studies of sports injuries are available but surprisingly little has been studied about women's sports injures in cricket (Kannus et al., 1987).

As cricket is a popular sport and largely played but have very limited research into cricket injuries (Saw et al., 2009). A survey about among 213 Out of 271 clubs player about 251 injuries was reported. Finger is the most vulnerable to injury, head, face and neck about a quarter and seven become stuck on the head by ball. On the other hand over a quarter of all injuries in legs and feet and five players sustained fracture of a bone in the feet. This study also showed that lost more days because of upper limb injuries and the range is 0 to 50 days, on the other hand 9 days for mid body injuries and 6 days for lower limb (Weightman& Browne, 1975). Stretch (2003), found in a retrospective study, where he saw files of 54 players and he found that the rate of acute injury was 57.4% per one thousand days of playing cricket and he was also found that the regional distribution of injury accounted for Hand and Neck 6%, Trunk 20%, Upper limb 29%, and Lower limb 45%.

For one of the most popular world's team sports, there have been relatively few publications in the medical literature on cricket injuries (Orchard et al., 2002). There are some cricket playing countries have studies about cricket injuries. But in our country there is no such specific study about cricket injury (Zaman, 2012). There are very few countries that have been reported the incidence of cricket injuries, among them British sports Council one. According to the council, 2.6 injuries per 10,000 player hours, on the other hand Australian Cricket Board reported 24.2 per 10,000 player hours which is higher than the previous (Dhillon et al., 2012).

In West India, injuries occurred in player between the age of 18 to 37 years and about 50% of them under 23 years. 80% get injury in first time and 10% recurrent, 76% acute, on the other hand 16% chronic or over use injury. Muscle strain comprise of 26%, ligament injury cover about 12%, stress fracture and other fracture are 12% and 10% of total injuries (Mansingh et al., 2006).

In South Africa the age range was 12- 29 years who get injury and injury rate was 85.1%, which is recorded by physiotherapist among 436 cricketers. Most of the injury was occurred in first time (64.5%), Lower limb account for nearly half of the injuries (49.8%), the primary mechanism of injury occurred during bowling (25.6%), running, catching driving and throwing the ball account 21.4% of injuries (Stretch, 2003). In India cricket is the most popular sports and also earn importance in al South East

Asian countries as well. A study, which is conducted by use of 95 player and the and the principle findings of the study was among 95 player, 24 was bowler, where 19 bats man and 8 wicketkeepers and age range 14-34 where mean age 18.9 years. Upper limb injuries account for 16.8% and finger most vulnerable to injury and most injuries occurs during fielding (Dhillon et al., 2012).

In recent years the role of physiotherapy become more specific and the therapist conduct more and more research and designed so many clinical trials in sports injury sector. The physiotherapist plays role in both prevention and management of sports injury and athletic recovery before and after injury. Today the participation of women in sports and exercise increased day by day and also the women obtain much awareness about the importance of physiotherapy and exercise for long time well-being and health and also for prevention of sports injuries (Trog et al., 1990).Mainly literature about cricket injuries obtains from different case and case series. And the data was very specific and consist of the incidence, frequency, nature of injuries which acquired by the player during playing club or provincial cricketer and that is the reason for the limitation of data. So, to find out the incidence of the injuries, which occurred very frequently is the main aim of the study (Stretch, 1993).

1.2 Rationale

Bangladesh is a South Asian country and one of the developing countries in the world. Though in Bangladesh cricket become a very popular game. Some cricket playing countries have studies about cricket injury, but unfortunately in our country there is no such study about injuries among women. For this the team management can not able to introduce a problem oriented training program to prevent the common tennis injuries in perspective of Bangladesh. That is why the women cricket players more frequently get injury. Physiotherapy has a big role in injury prevention and treatment after injury. So, it is very helpful for the player and also for physiotherapy profession to study more about sports injuries and the role of physiotherapist in case of prevention before injury and treatment after injuries.

Bangladesh has minimum number of graduate physiotherapists. But without evidence, practice is not valid for the profession in specific geographical area. So, to develop an evidence to help strengthen the physiotherapy profession in Bangladesh and for the great interest, researcher would like to do this study. Moreover, after completing this study we can know the common injuries, possible preventive measure and also treatment and these will be helpful for both women cricket player and also for the physiotherapy profession.

1.3 Research question

What are the common sports injuries among the women cricket players?

1.4 Study objectives

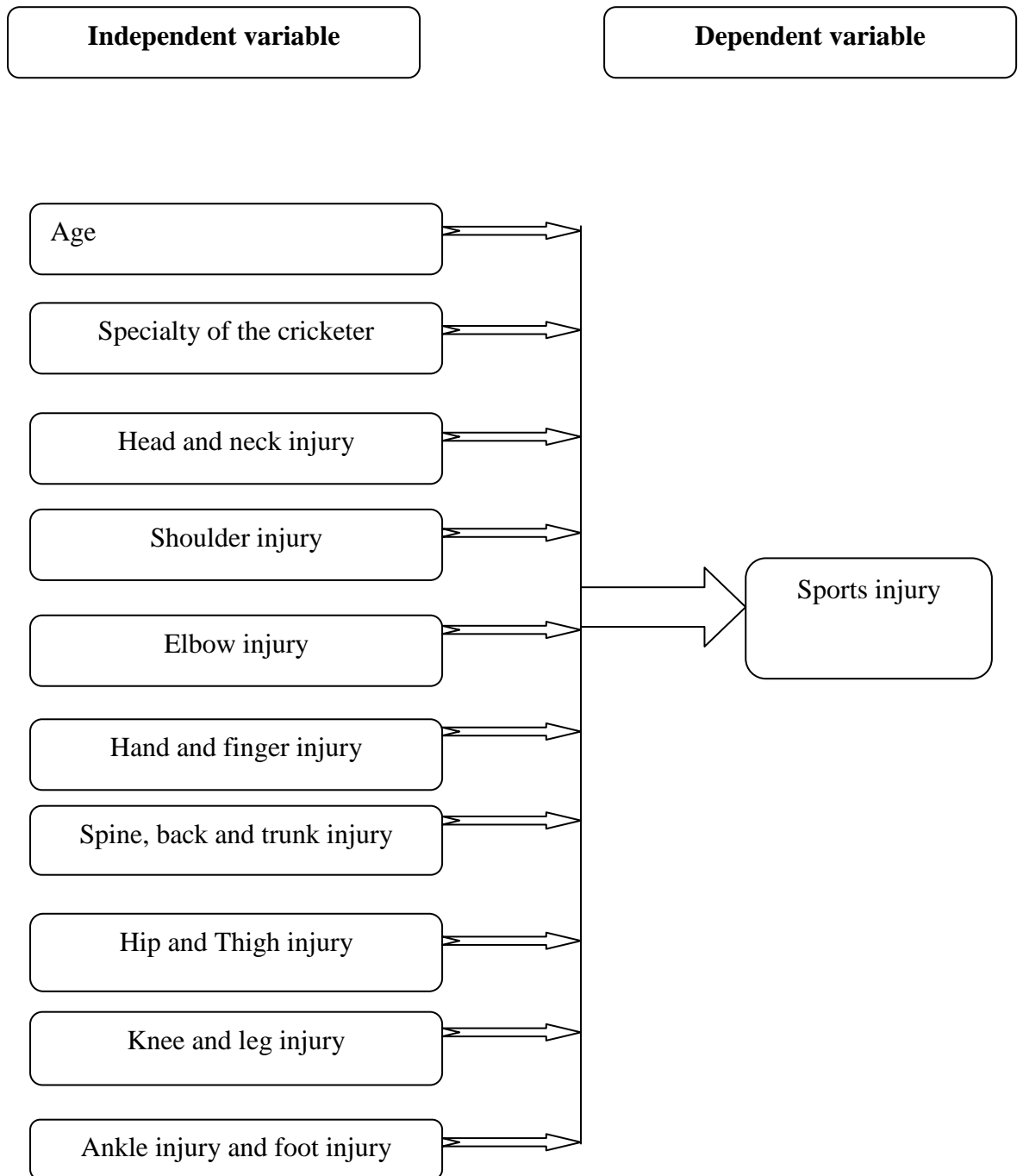
1.4.1 General objectives

- To find out the common sports injuries among the women cricket players.

1.4.2 Specific objectives

- To find out the percentage of common injuries among woman cricket players.
- To check out the nature of injuries and vulnerability of injuries.
- To identify which body part of the body is being more injured and the nature of management.

1.5 Conceptual framework



1.6 Operational definition

Cricket

Cricket is an open-air game played on a large grass field with ball, bats, and two wickets, between teams of eleven players, the object of the game being to score more runs than the opposition. Cricket is played mainly in Britain and in territories formerly under British rule, such as Australia, South Africa, the West Indies, New Zealand, and the Indian subcontinent. The full game with two innings per side can last several days; shorter single-innings matches are usual at amateur level and have become popular at professional level since the 1960s.

Women cricket

The history of women's cricket can be traced back to a report on 26 July 1745 and a match that took place between the villages of Bramley and Hambledon near Guildford in Surrey. Bangladesh cricket has made another significant step in right direction by launching first ever National Women Cricket Championship. Women One Day internationals are played since 1973 and first ever Women's Cricket World Cup was held in 1973 in England in which they emerged as champion.

Women cricket player

Women who are under training and playing cricket both nationally and internationally.

Injury and sports injury

Injury may be defined as the incidence in which one can get hurts. Sports injuries may be define as the injuries which one can get during sporting activities. Common types of physical injury includes- Soft tissue lesion, Fracture of bone etc. Sports injury defines as the injuries which occurs during sports activities.

Injured player

Injured players may be defined as the player who gets injuries during practicing, during training session and during playing national and international cricket match following one year.

Women's participation in sports increased tremendously and the last three decades called the witness of this evaluation. But as the increased participation in sports of women, the number and incidence of injuries also increased among the women athlete. And the injuries are acute or overuse. Injuries considered a the integral parts of sports, on the other hand the women's anatomical and physiological structure quite different from men, such as- the length of lower limb comprised 56% in case of men and Women comprised 51.2%, the women have shorter stature and wider pelvis which gave them lower center of gravity and affect in balance more over the women have increased joint laxity and it gives more abundant joint capsule and made the joint more vulnerable to injuries than men and also the women have small heart and for this reason women have low systolic and diastolic pressure which leads to decreased the effectiveness in both aerobic and anaerobic performance of women and make the women more vulnerable for getting injury (Lukovic et al., 2007).

Injuries to the sports are very common phenomenon. But there is no perfect classification of sports injury. But mostly it can be classified as acute and over use injury. Acute injury such as: fracture, periostial, contusion, dislocation/subluxation, sprain, strain, contusion, cramp, traumatic bursitis etc. And overuse injuries such as: stress fracture, periostitis, synovitis, osteoarthritis, inflammation, delayed onset of muscle soreness, tendinitis, bursitis etc (Bruckner & Khan, 1993). Cricket is played in more than 60 countries in the world and is a major international sport. Cricket is an outdoor game. Each side there is 11 players. Stretch (2003) mentioned that the younger player were at the most risk of injury and their mean age was 16.8 years and the reason of those injuries is the incomplete growth of those player due to younger age. Injuries occurred in women mostly in between the age of 12-19 years and the common area is leg, ankle, foot and heel (Orava, 1981).

Today sports injuries are become a very important public health issue and have been indentified to prevent and control. Management and prevention of injury and illness surveillance considered as the vital step for athletic health problems and their management (Ranson et al., 2013). For this an appropriate preventive measure and

appropriate technique to identify the risk factor is essential in cricket, as cricket is associated with many contact and acute injury (Shaw & Finch, 2007). Physical fitness is very important for active participants in cricket or any sports event. There are so many risk factors in getting injured, such as, internal or intrinsic, external or extrinsic or environmental factors and also divided into modifiable and non-modifiable factors (Bahr & Holme, 2003). Cricket is played as team sports which consist of some specialist bowlers, batsman, one or two all rounders and a wicket keeper who stands behind the stumps (Zaman, 2012).

Injuries to cricket are very common as cricket is the world's major team sport (Orchard et al., 2005). In the 1970s was the year when cricket was regarded as a sport of 'moderate-risk injuries'. These days' cricketers are more susceptible to higher risk injuries and cricket ranks fifth among causes of non-fatal accidents. Cricketers are expected today to train longer, harder and earlier in life to excel in their chosen sport. In cricket there are so many repetitive nature of the game and the need often to be out on the field of play for long periods further predispose cricketers to a wide range of injuries. Injury can occur during any phase of the game - bowling, batting or fielding - and can involve any part of the body. In South Africa, the severity of the injuries has decreased compared to the past decade and about 2/3 of the players returned to the sport in the 1st week of injury where in past times the percentage was less than half and this happens for the better management and scientific and medical reports and studies about cricket (Stretch, 2003).

Batting, bowling, fielding or wicket keeping are the most important phases of cricket and most of the injuries occur during one of these phases (Gregory et al., 2004). According to Dennis et al. (2005), high bowling workload is the risk factor for overuse injury, because increased bowling frequency is significantly associated with the increased risk of injury and for this reason some cricket playing countries adopted some restriction on the number of bowling overs for the fast bowler. In Australia the fast bowler consistently been identified as the greatest risk injury and the reason was the improper or poor technique and poor physical presentation and also overuse injuries. In English junior fast bowler study showed that bowlers suffer from most back injuries (16%) including stress fracture and back pain (52%) (Stretch, 2003).

Bowling identified as the highest risk of injury and pace or fast bowler being most injured and lost their time of cricket due to absence from playing for injury and the incidence was 21.1% in international match and 18.1% during domestic competition (Frost & Chalmers, 2012). Kountouris et al. (2011) said that fast bowling kinematics and kinetics are different for different bowler and bowling technique. The asymmetrical nature of the bowling technique may results in asymmetrical muscular contraction. On the other hand Dennis et al. (2008), invent two risk factors for injury for fast bowler, one of them was decreased range of ankle dorsiflexion the leg contralateral to the bowling arm and other was increased internal rotation of the hip on the leg ipsilateral to the bowling arm.

Fast bowling called an integral part of cricket and also must vulnerable to injury. Back injuries are very much common because the nature of activities during fast bowling, such as, repetitive flexion, extension and / or rotation of the spine and also for inadequate physical and physiological attributes, postural defects, poor bowling technique are high physical demands (Foster et al., 1989).

Lumber spondylolysis is now very much common among sports men and women and specially cricketer because this game requires repetitive movement of spine. But Millsomet al. (2004), find out in a study that, lower back pain and pars interarticularis effects or spondylolysis is not interrelated all time and this problem remains asymptomatic among bowler. But Gregory et al. (2004), said in his study that pars interarticularis of the lumbar spine is associated with low back pain and back pain may indicate the development of this problem. Fast bowling is associated with pars interarticularis bone stress and become the reason of developing incomplete stress fracture and in cricketer unilateral spondylolysis may arise on the contra lateral side to the bowling arm because of the nature of spinal movements.

Stretch (2003), said that the most cricket injuries occurred during bowling about 38% and 47.4% among Schoolboy bowler including back injuries which is compared with provincial bowlers about 33.0-65.7%. The primary mechanism of injuries was the bowling during delivery of the ball and during fast bowling about 25.6%. Among 99

South African cricket players, the prevalence of low back pain was found among the 37 fast bowlers and the pace bowler sustained more muscle and tendon injury rather than other player (Gregory et al., 2004).

Fast and spin bowling both have been implicated in stress fractures of the pars interarticularis, due to technical problem and over use and the incidence of 54% of pars interarticularis defects in the study (Zaman, 2012). Spinal overuse injuries occur more frequently to cricketers adopting a mixed bowling action than to those who favor a front- or side-on bowling technique. Strategies to ensure that cricketers do not adopt the mixed action or bowl too fast for extended periods can prevent these back injuries (Finch et al., 1999). There is another factor to produce injury is, workload while bowling. There is a relationship between high bowling workload and injury. The risk of injury is much higher for those bowlers who experience consistent and sustained high workload (Dennis et al., 2005). Low back pain is presented by so many competitive athletes and provides the physiotherapist a multiple decision making challenges (Merlino&Perisa, 2012).

Shoulder injuries in cricket tend to result from throwing but can be aggravated by bowling, because of the repetitive forces involved. In a good bowling action, the shoulder should not be subjected to forces that lead to instability. The arm should not get into the position of 'apprehension' (abduction and forced external rotation), as this is the mechanism that subjects the capsular ligaments to forces that threaten instability. Even with a good bowling action though, over-use injuries can weaken the rotator cuff and allow increased transnational movement of the humeral head, resulting in instability and shoulder pain. With increased translation of the humerus, the long head of biceps is recruited to help stabilize the joint. This in turn can lead to traction on the long head of biceps tendon, predisposing the shoulder to tendonitis and superior labral anterior posterior (SLAP) lesions. Slow leg-spin bowlers develop internal rotation force at the end of their delivery and are therefore especially prone to these over-use injuries (Orchard et al., 2006). In cricket during the over head throwing motion of shoulder complex is generated by legs and trunk. In case of bowling the shoulder internal rotator are in acceleration phase with in arm in concentric contraction and the external rotation used during deceleration phase and in bowling over load due to this mechanism the shoulder joint glenohumeral rhythm hampered

and become vulnerable to injury. In England and Wales Cricket board it was reported that about 5.5% of all injuries in first-class country cricketer in shoulder during 2001 and 2002 and this findings are similar as the report of South Africa about 5.2% and 7% among first-class Australian teams (Sundaramet al., 2012).

The most important lesson for cricket to prevent the high rate of injury itself that an isolated limited-over to low- injury prevalence in fast bowler if this done than the fast bowler may not suffer from long-term injuries (Orchard, 2013).Fast bowler miss sports time through injury about 16% of all potential playing time, whereas the prevalence rat for all other positions is less than 5% (Orchard et al., 2005).

Cricket is sports where a bower delivered hard ball directly towards the bats man at very high speed and for this reason the potential for chance of injury may arise during batting and batting helmets are used which is designed to protect against the direct hit of bowling during batting (Ranson et al., 2013). Batsmen get 17.1% of the total injury, mainly from the direct impact of the ball or from over-use injuries (Stretch, 2003). Batsmen always wear knee and shin pads, they do not always wear other protective clothing. It is common to wear a 'box' over the scrotal area, some use thigh pads, and most batsmen will wear a helmet when facing a fast bowler. A direct blow to the shoulder and upper arm area by a rising delivery is legal and bowlers use it tactically to unsettle a batsman. Batting can also cause stress fractures of the pars intra-articulars. It usually responds to conservative management and may require a change of batting style (Zaman, 2012). According to Gregory et al. (2004), about 40% injuries occurred during fielding a first league and provincial cricketers and about 30% of injuries occurred among schoolboys during batting.

During Fielding the fielder generally remains at prolonged periods of relative inactivation. For this reason a fielder run for a ball suddenly, it may be induce a muscle strain. Fielders while throwing the ball, the shoulder remain at relatively unscratched situation. For this the shoulder may get injury. Moreover the fielders who places themselves close to the batsman, might get stricken by the ball and get injury. Server eye injury may induced by direct blow of a flying ball (Zaman, 2012). Fielding injuries comprise 28.6% of the total injury. Injured outfield players tend to use a bowling action to return the ball when fielding because powerful throwing is

impossible with a significant shoulder injury. This is less painful, can develop similar power to a throw and is very accurate. It does, however, take rather longer to prepare and deliver the ball. The later phases of throwing produce large 'distraction' forces (a force directed along the upper arm towards the elbow joint, in effect wrenching the arm away from the shoulder joint). The eccentric loading of rotator cuff muscles needed to resist these forces can stretch the muscles beyond their tensile limit, leading to both macroscopic and microscopic trauma, most commonly from the mid-supraspinatus posterior to the mid-infraspinatus area (Gony, 2009). Series knee injury may occur during fielding in sliding activity while stop or catch the ball. To prevent this sliding stop method of fielding in cricket become popular in recent years among cricketer through its exposure on television (Hagen et al., 2000).

Low back pain is very much common and in highly prevalence rate in cricketers with back and trunk injury prevalence. About 4.1% of fast bowler becomes disqualified from selection for this reason. Low back pain is evenly equal in both adult and adolescent cricketer. In a study it was found that 22% adolescents suffer from Low back Pain during four years of practice period which leads to chronicity and high risk for adult player A number of modifiable factors has been developed and the most common is the bowling action with a mixed action proposed to increase low back pain and avoid mix bowling action (Morton et al., 2013).

Eye injuries are very common in wicket keeper. Recently the South African wicketkeeper, Mark Bouncer got eye injury by a Ricocheting bai. Paul downtown (English Wicketkeeper) in 1990, and also Indian Wicketkeeper Saba Karim in 2000 was hited by ball in eyes and bound to get retire from playing. Recently three potential solution s were established to protect the eye of wicket keeper had established, such as, Modification of the bail sand the use of helmets and Protective eyewear (Mann & Dain, 2012). The head injury in a risk in cricket as well, and cricket is also cause for eye injury which has been infrequently reported and only one paper is devoted to such injuries and showed that approximately 9.4% or 5.4%. In Australia the rate is 7.0% of all traumatic eye injury (Jones &Tullo, 1986).

In New Zealand cricket is very popular sports and enjoyed at competitive and social level. Cricket is a sport where there are very good facial protection and injury to the

head and neck region occurred very frequently but still seems as an emergency area for injuries. Over 11 year with 561 players and among them 40 players get maxillofacial injury. Maxillofacial fracture occurred frequently in cricket and the mechanism of injury was direct impact of ball (55%), collision between player (5%), instrumental hit (2.5%). 28% injured player get mid face fracture. In this study it was found that a high proportion of fracture in facial region and this result give reinforcement to the player to take proper protection and also education of social players (Lee, 2012).

A prospective cohort study was conducted for the New Zealand cricket player's injury to elite New Zealand cricket player for the 2002/2003 to 2007/2008 season. In this study the participant number was 248 and about 414 injuries were sustained by 152 player. The lower limb was the most vulnerable to injury about 47.3% and frequently being injured. Trunk accounted 25.1% and lower limb 43.5%. On the other hand during domestic competition and thigh accounted 16.35, lower back 15% and abdomen 8.7% injury. There are three leading body part which being most injured during international competition and there are low back 22.1%, knee 20.1% and shoulder 10.9%. On the other side muscle tear/sprain was the most common injury for both domestic (45%) and International (25%) matches (Frost & Chalmer, 2012).

3.1 Study Design

The purpose of the study was to find out the most common spots injuries occurring to the women cricketers. To conduct this study, A cross sectional prospective survey design is chosen because data were 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). The goals of the quantitative research are to answer a specific research question by showing statistical evidence that the data may be addressed in a particular way (Bailey, 1997). A survey is a research 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 interest to the research (Hicks, 1999). Survey design is primarily used to measure characteristics of a population. The advantages of survey design are that one can reach a large number of respondents with relatively minimal expenditure, numerous variables can be measured by a single instrument, and statistical manipulation during the data analytical phase can permit multiple use of the data set (Depoy&Gitlin, 1998). The most common survey approach is the prospective design which focuses particularly on present events (Hicks, 1999). So, for conducting of this study a cross sectional prospective survey approach was used.

3.2 Study site

Population was the injured Cricketers of BKSP, BCB and BKS who had injuries in between last one year of playing cricket and training session.

3.3 Sample selection

Samples were selected by convenience sampling technique, because the cricket players remain in various tournaments on national and international level throughout the year and in convenience sampling technique are chosen to meet them easily.

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= 0.20 (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 conducted with fifty seven samples, were selected according to the inclusion and exclusion criteria.

3.5 Inclusion criteria

The respondents were cricket players who had injuries while playing or involving practice in last one year. Selected participants had willingness to participate in the study.

3.6 Exclusion criteria

The cricket players, who had no injuries in last one year and had no interest or willingness to be participant, were excluded.

3.7 Settings

The data were collected from the field data of BKSP, BCB and BKS authority.

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.

3.8.1 Method of data collection

At very beginning researcher was clarify that the participant had the right to refuse to answer of any question during completing questionnaire. They could withdraw from the study at any time. Here also clarify to all participants about the aim of the study. Participants were ensured that any personal information were not be published anywhere and also could not imposed any bad reputation in their carrier. At first took permission from each participant by using a written consent form. After getting consent from the participants, a questionnaire was used to identify the common injuries among the participant.

Data were collected by using a structured questionnaire. Question type was closed ended. Questionnaire is used because questionnaire is still a very popular and very useful technique of data collection within the health care area (Hicks, 1999). Additionally the aim of the study was to identify the common injuries among the women cricket player of BKSP and BCB and BKS. So, it is easier to identify these problems by using questionnaire 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 (Bowling, 1997). So, structured questionnaire is the most suitable way for data collection. Respondents are often more willing to go quickly through a questionnaire composed of closed ended question rather than writing several sentences that they have to think about and compose (Bailey, 1997). So, closed ended questions were used in the study.

3.8.2 Materials used for data collection

For collecting data questionnaire was used to find out the data for the study. Pens and consent forms were used also for data collection.

3.8.2.1 Questionnaire

For data collection questionnaire was used. The samples of the study were the injured cricket trainees and players of BKSP, BCB, and BKS. The whole questioner was described to the participants. They were helped if they had any difficulty to understand any part of the questionnaire. The questions of the questionnaire were closed ended questions, which were set up sequentially. In the questionnaire there

were 10 questions. The questionnaire was set in such a pattern so that, various information about the injuries of the cricket trainees can be find out and fulfill the aims and objectives of the study. These questions includes: training age, specialty of cricket plays, the injuries, type of injuries, severity of the injuries, frequency of the injuries, recurrence of injuries and frequency of recurrence, period out training due to injury, type of treatment taken and the state of improvement after treatment.Face to face interview is the most effective way to get full cooperation of the participant in the survey. According to the understanding level of the participant, sometimes the questions were described, so that the participants can understand the questions perfectly and answer accurately. All data was collected by the researcher herself.

3.8.3 Duration of data collection

The duration of data collection was 3 weeks. To collect data necessary time was taken, for each participant. It was taken 15-20 minute to complete each interview.

3.8.4 Data analysis

After collecting data, these were entered into SPSS 16.0 version software package. Descriptive statistics was use to analyze data. Descriptive statistics refers method of describing a set of result in term of their most interesting characteristics.

3.9 Ethical considerations

Bailey, 1997 mentioned that it is expected to behave ethically in all areas of their practice. So, before starting the study, a formal project proposal was submitted to the department of physiotherapy and after verifying the proposal,permission was taken from BHPI ethical review committee for research project. The participants were explained the purpose and goals of the study. This study followed the World Health Organization (WHO) & Bangladesh Medical Research Council (BMRC) guidelines and strictly maintained the confidentiality. After that, permission for data collection was obtained from the BKSP, BCB and BKS authority. This study was not associated with the treatment procedure. The respondents were clearly informed about the study and they were also informed that, any time any of them can withdraw their participation without any penalty. After that they were interviewed following signing the consent form.

3.10 Inform consent

The aims and objectives of this study should be informed to the subjects verbally. Before conducting research with the respondents, it is necessary to gain consent from the subjects (Bailey, 1997). The consent form was given to the subject and explained them. The subjects had the rights to withdraw themselves from the research at any times. It should be assured the participant that his or her name or address would not be used. The information of the subjects might be published in any normal presentation or seminar or writing but they would not be identified. The participant will also be informed or given notice that the research result would not be harmful for them. It would be kept confidential. Every participant has the right to discuss about her problem with senior authority.

3.11 Limitations

- The limitation of this study was small sample size. It was taken only 57 samples and could not able to collect samples by random selection because, there were not adequate subjects and study period was short.
- The one of major limitation was time. To conduct the research project on this topic, time period was very limited. As the study period was short so the adequate number of sample could not arrange for the study.
- As the study was conducted at BKSP, BCB and BKS which may not represent the whole country.
- There might have change of recall bias because the participant may forget some information about their injuries.
- The research project was done by an undergraduate student and it was first research project for her. So the researcher had limited experience with techniques and strategies in terms of the practical aspects of research. As it was the first survey of the researcher so might be there were some mistakes that may overlook.

Socio-demographic Information

Age

The study was conducted with 57 participants of women cricket players in Bangladesh. Participants mean age was 19.14(\pm 3.41) years. The range is 13-28 years. Among the participants highest number of the participant were at the age range of 17-20 and the number were 27.

Among the age of the participants, 13-16 years were 24.6 %, 17-20 years were 47.4%, 21-24 years were 21.1%, and 25-28 years were 7.0% (Table-1).

Age	Number	Percent
13-16	14	24.6
17-20	27	47.4
21-24	12	21.1
25-28	4	7
Total	57	100

Table-1: Age of the participants.

Specialty of the cricketer

Analysis showed that among the 57 cricketers 12 (21.1%) were batsmen, 14 (24.6%) were bowler, 24 (42.1%) were all rounder (both batting and bowling), and 7 (12.3%) were wicketkeeper.

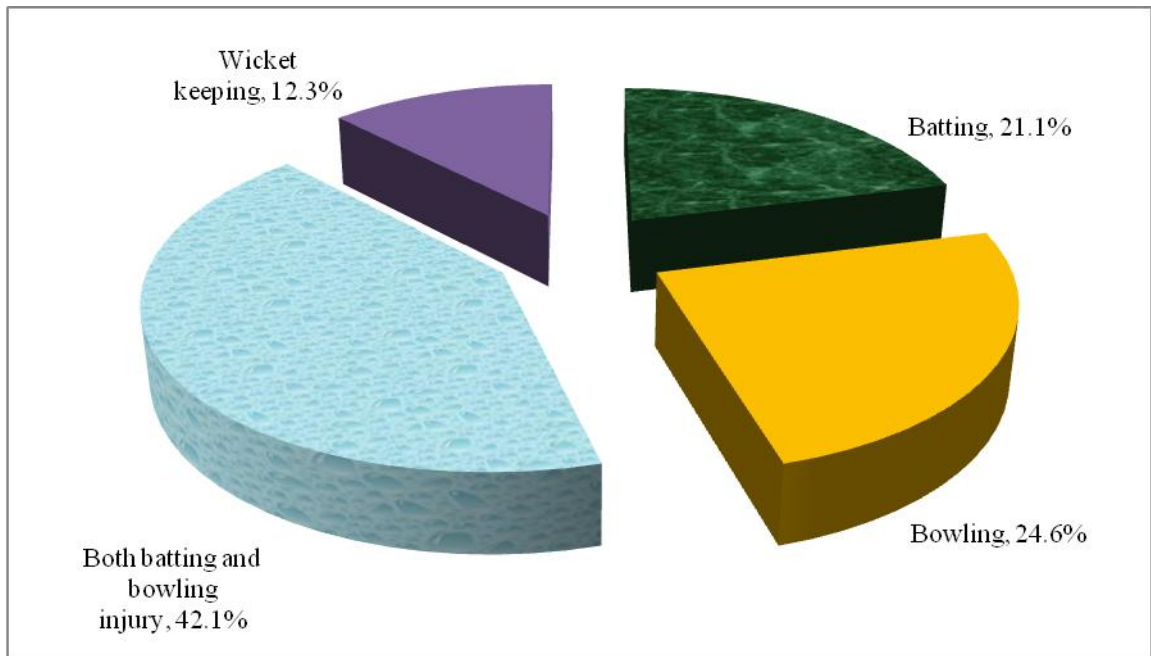


Figure-1: Specialty of the cricketer.

Regional injury

Analysis showed that among the 57 participants, 34 (59.7%) had head and neck injury, 48 (84.2%) had shoulder injury, 21 (36.8%) had elbow injury, 46 (80.7%) had wrist injury, 18 (31.6%) had hand and finger injury 33 (57.9%) had spine, back and trunk injury, 54 (94.7%) had hip and Thigh injury, 50 (87.7%) had knee and leg injury , 52 (91.2%) had ankle injury and foot injury.

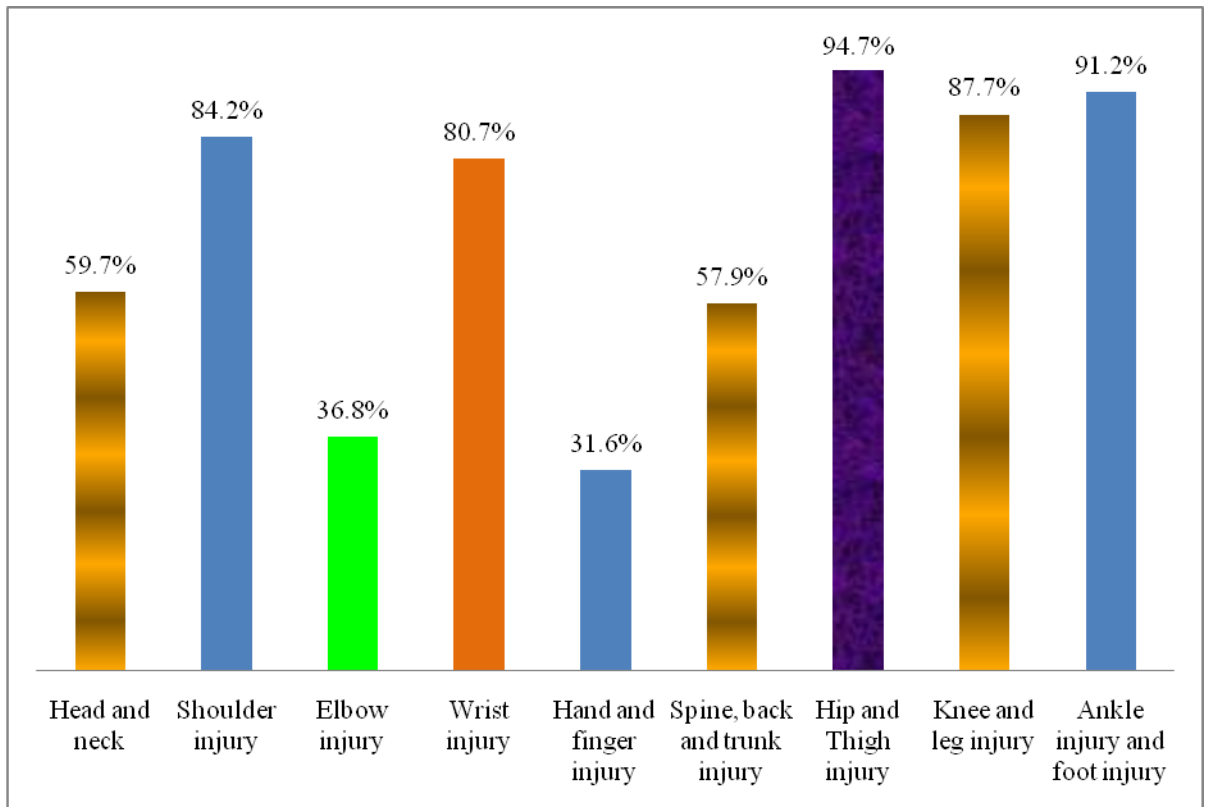


Figure-2: Regional injury.

Regional injury according to specialty

Analysis showed among 57 participant batsman were 12, 14 bowler, 21 al-rounder and 7 was wicketkeepers. And batsman 6 (17.6%) had head and neck injury, 10 (20.8%) had shoulder injury, 8 (38.1%) had elbow injury, 10 (21.8%) had wrist injury. 4 (22.2%) had hand and finger injury, 7 (21.2%) had spine, back and trunk injury, 12 (22.2%) had hip and Thigh injury, 12 (24%) had knee injury and 11 (21.2%) had ankle and foot injury. And the table-3 also showed that hip and knee was the more Vulnerable regions for batsman.

Analysis showed that, among 14 bowler 9 (26.4%) had head and neck injury, 14 (29.1%) had shoulder injury, 5 (23.8%) had elbow injury, 13 (28.3%) had wrist injury, (22.2%) had hand and finger injury, (9.1%) had spine, back and trunk injury, 13 (24.7%) had hip and Thigh injury 12 (24%) had knee injury and n14 (26.9%) had ankle and foot injury. And shoulder and Ankle are more injured regions for bowler.

In this study among 24 al-rounder, 12 (35.3%) had head and neck injury, 20 (41.7%) had shoulder injury, 5 (23.8%) had elbow injury, 18 (39.1%) had wrist injury, 6 (33.3%) had hand and finger injury, 17 (51.5%) had spine, back and trunk injury, 23 (42.6%) had hip and Thigh injury, 22 (44%) had knee injury and 20 (38.5%) had ankle and foot injury. And hip was the most injured joint of al-rounder.

In this study among all wicketkeeper, 7 (20.7%) had head and neck injury, 4 (8.3%) had shoulder injury, 3 (14.3%) had elbow injury, 5 (10.9%) had wrist injury, 4 (22.2%) had hand and finger injury, 6 (18.2%) had spine, back and trunk injury, 6 (11.1%) had hip and Thigh injury, 4 (8.%) had knee injury and 7 (13.5%) had ankle and foot injury. Head & neck and ankle & foot were the most vulnerable joint for wicketkeepers.

Region of injury	Total number of injury		Batsman		Bowler		Both batsman & bowler		Wicket Keeper	
	Number	%	Number	%	Number	%	Number	%	Number	%
Head and neck	34	59.7	6	17.6	9	26.4	12	35.3	7	20.7
Shoulder injury	48	84.2	10	20.8	14	29.1	20	41.7	4	8.3
Elbow injury	21	36.8	8	38.1	5	23.8	5	23.8	3	14.3
Wrist injury	46	80.7	10	21.7	13	28.3	18	39.1	5	10.9
Hand and finger injury	18	31.6	4	22.2	4	22.2	6	33.3	4	22.2
Spine, back and trunk injury	33	57.9	7	21.2	3	9.1	17	51.5	6	18.2
Hip and thigh injury	54	94.7	12	22.2	13	24.1	23	42.6	6	11.1
Knee and leg injury	50	87.7	12	24	12	24	22	44	4	8
Ankle injury and foot injury	52	91	11	21.1	14	26.9	20	38.5	7	13.5

Table-2: Regional injury according to specialty.

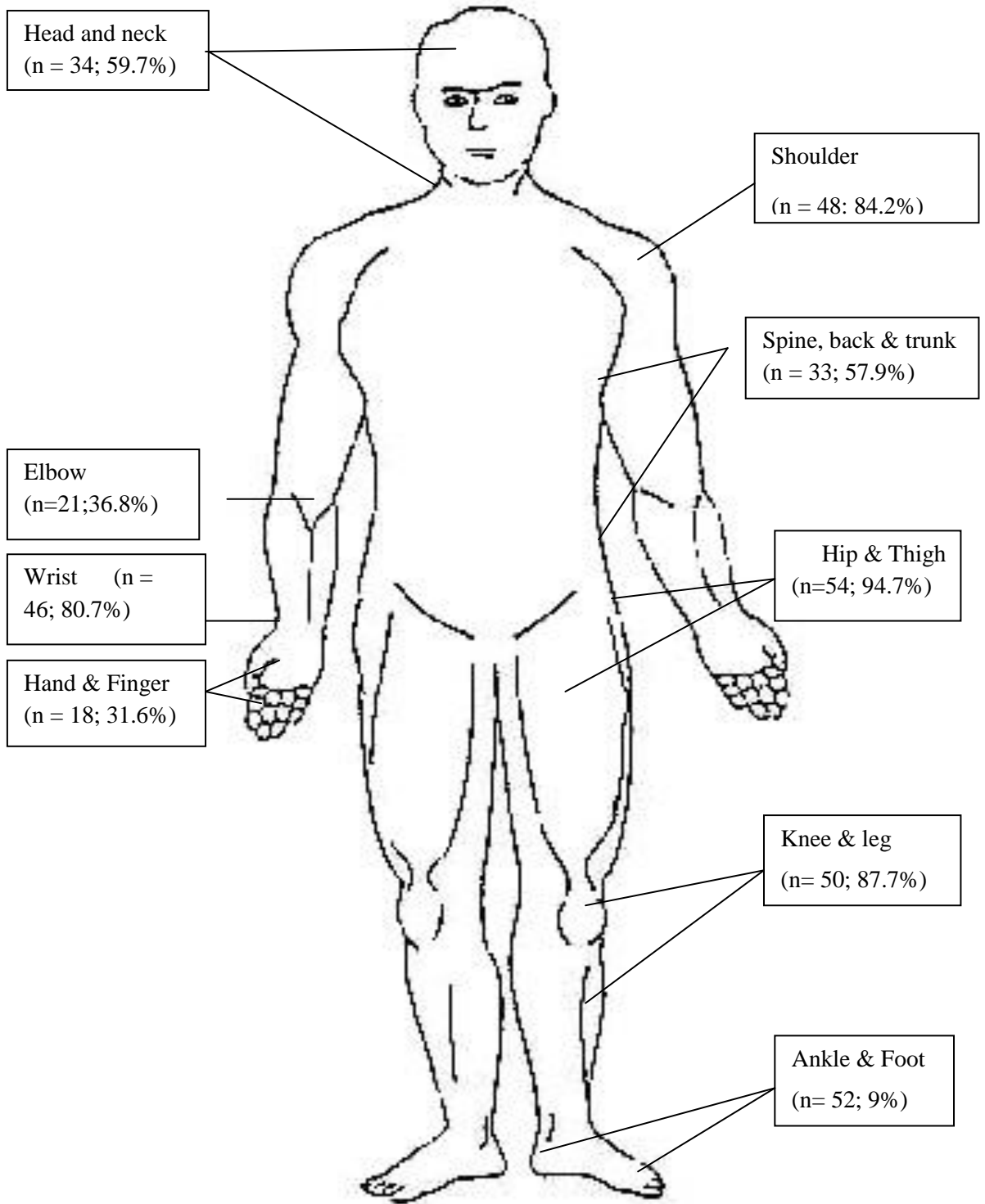


Figure-3: Injury Distribution in Body Diagram (Health advisors, n.d.).

Specific Injuries of the cricketers

Head and neck injury

Among the 57 cricketers 4 (7.0%) had head injury, 14 (24.6%) had Neck pain, 2 (3.5%) had eye injury and (24.6%) had facial injury and 23(40.4%) had no injuries in this region.

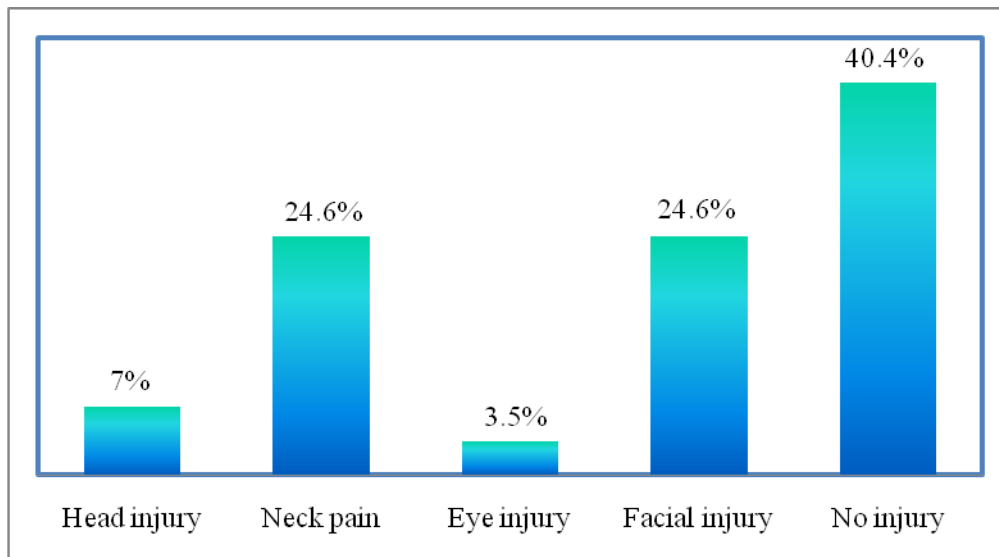


Figure -4: Head and neck injury.

Elbow injury

Among the 57 participant 19 (33.3%) had tennis elbow, 2 (3.5%) had golfer elbow and 36 (66.2%) had no injury in elbow.

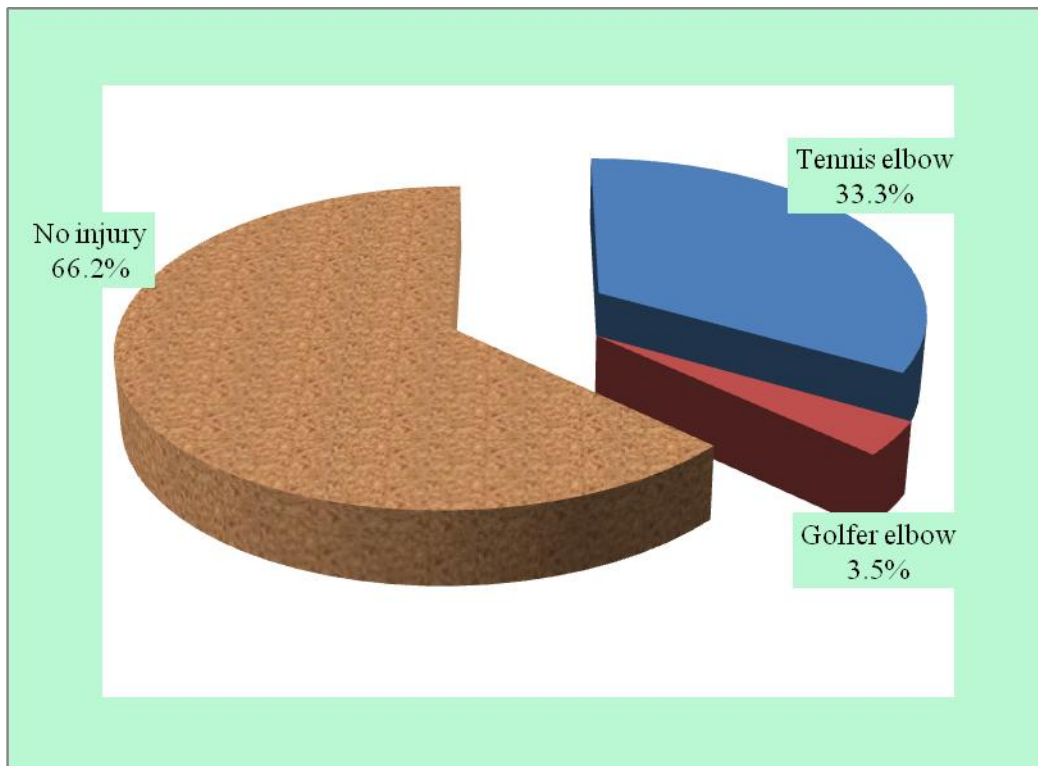


Figure -6: Elbow injury.

Wrist injury

Analysis showed that among 57 players 11(19.3%) had no injury, 45 (78.9%) had wrist pain and only 1 (1.8%) had fracture in wrist.

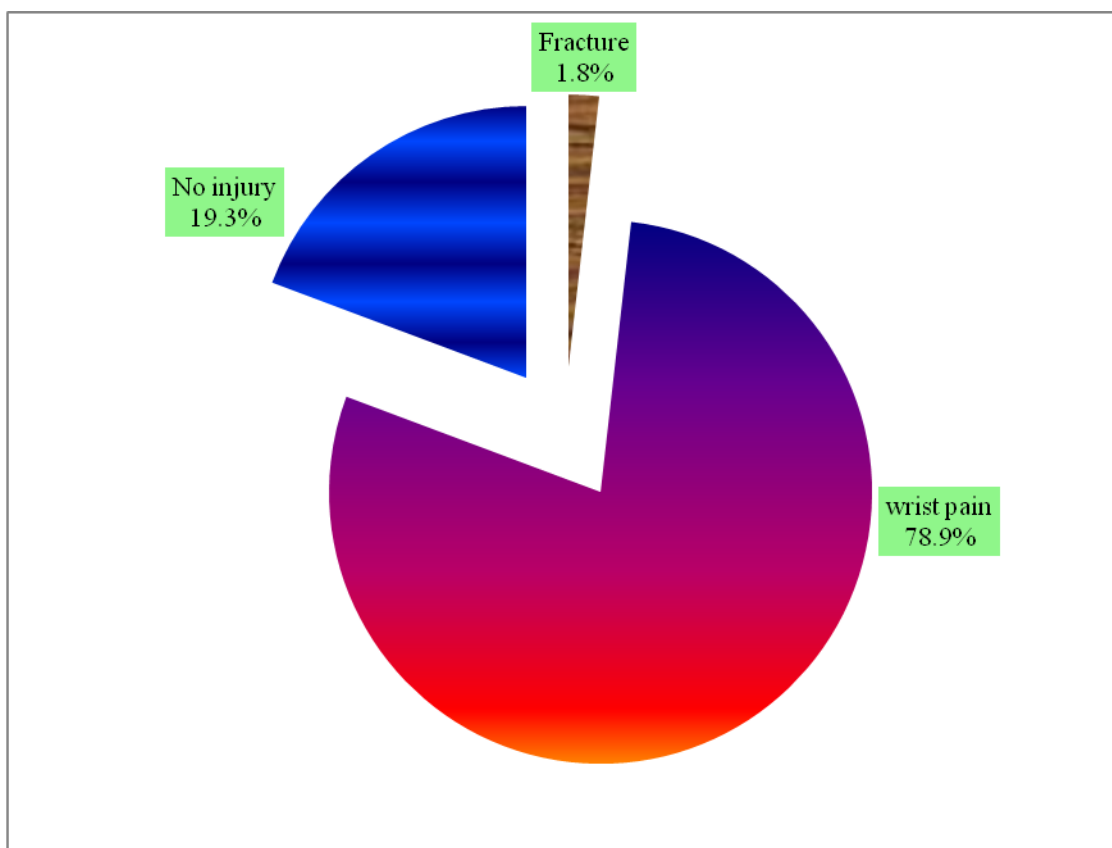


Figure- 7: Wrist injury.

Hand and finger injury

Analysis showed that 15 (26.3%) had fracture of phalanges, 3 (5.3%) had hand pain and about 39 (68.4%) had no injury in hand and finger among 57 women cricket player.

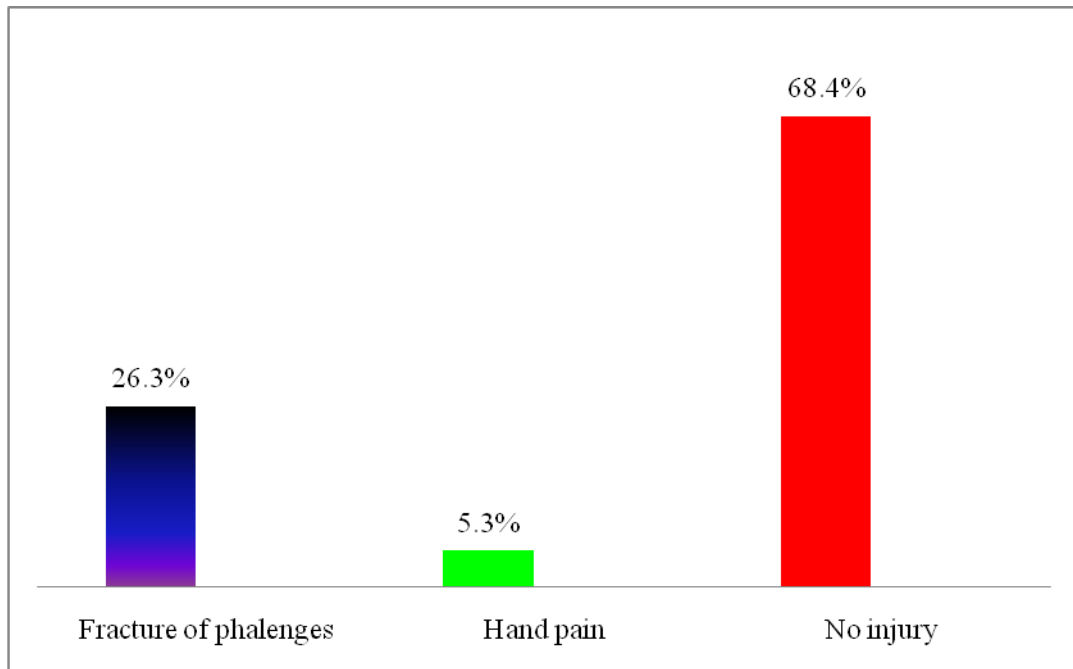


Figure -8: Hand and finger injury.

Spine, back and trunk injury

Analysis showed that 28 (49.1%) had back pain, 5 (8.8%) had chest pain and approximately 24 (42.1%) had no injury in spine, back and trunk.

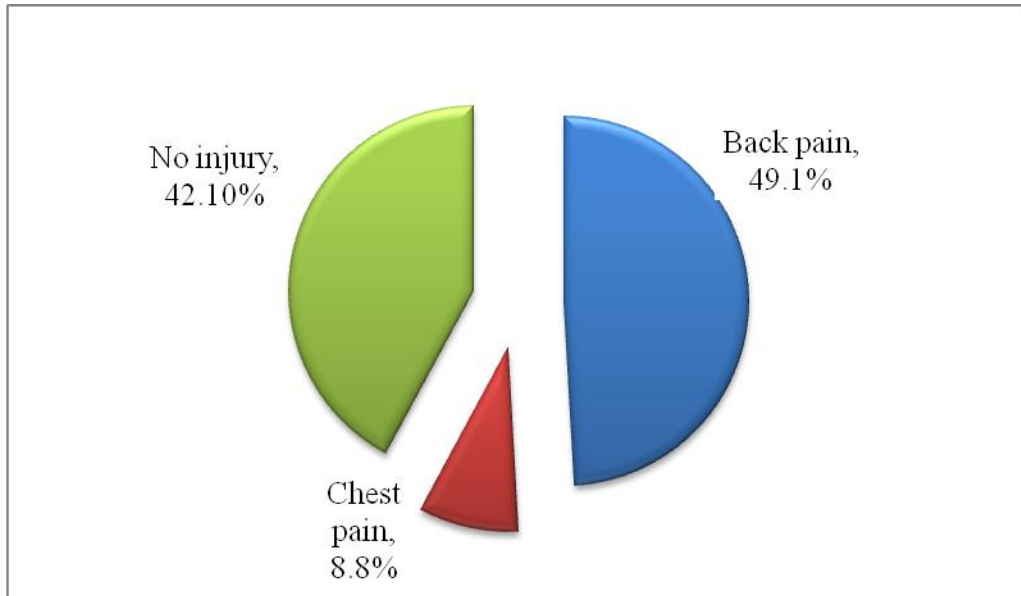


Figure -9: Spine, back and trunk injury.

Hip and Thigh injury

Among 57 women cricketer 1 (1.8%) had Fracture of femur, 11 (19.3%) had Groin pain, 11 (19.3%) had hamstring strain, 27 (47.4%) had quadriceps strain, 1 (1.8%) had groin pain, quadriceps strain and hamstring strain, 2 (3.5%) had groin pain and hamstring strain and 1 (1.8%) had groin pain and quadriceps strain.

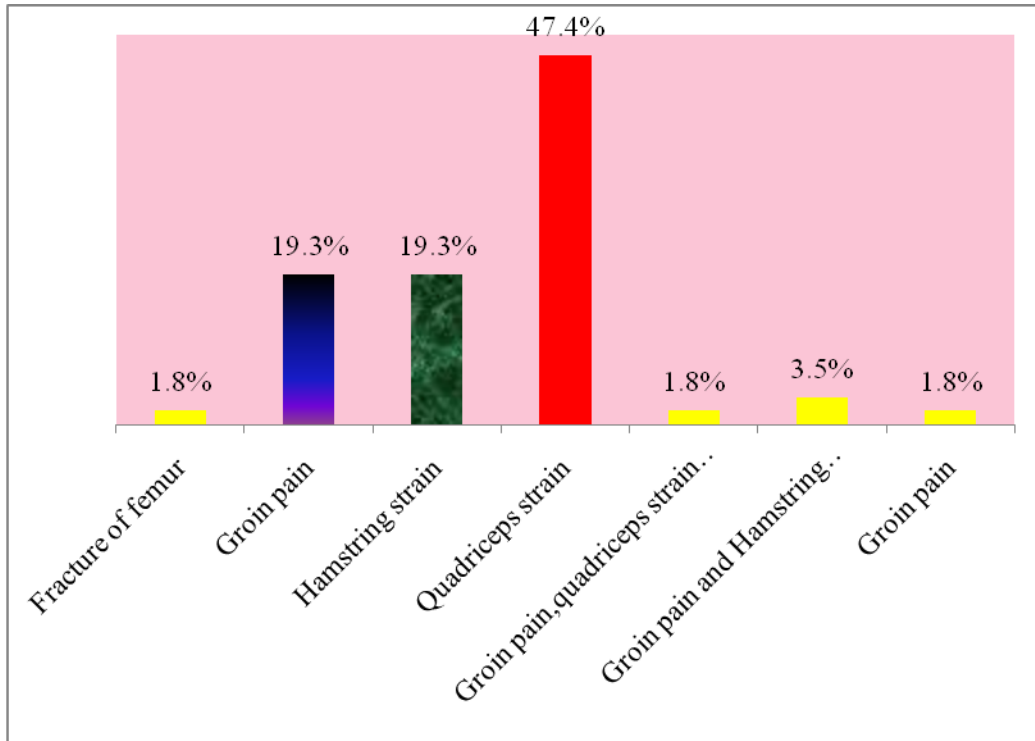


Figure -10: Hip and Thigh injury.

Knee and leg injury

Analysis showed that among 57 cricketer 14 (24.6%) had knee pain, 7 (12.3%) had ACL injury, 2 (3.5%) had PCL injury, 24 (42.1%) had calf pain, 3 (5.3%) had both knee pain and calf pain and about 7 (12.3%) had no injury in knee and leg.

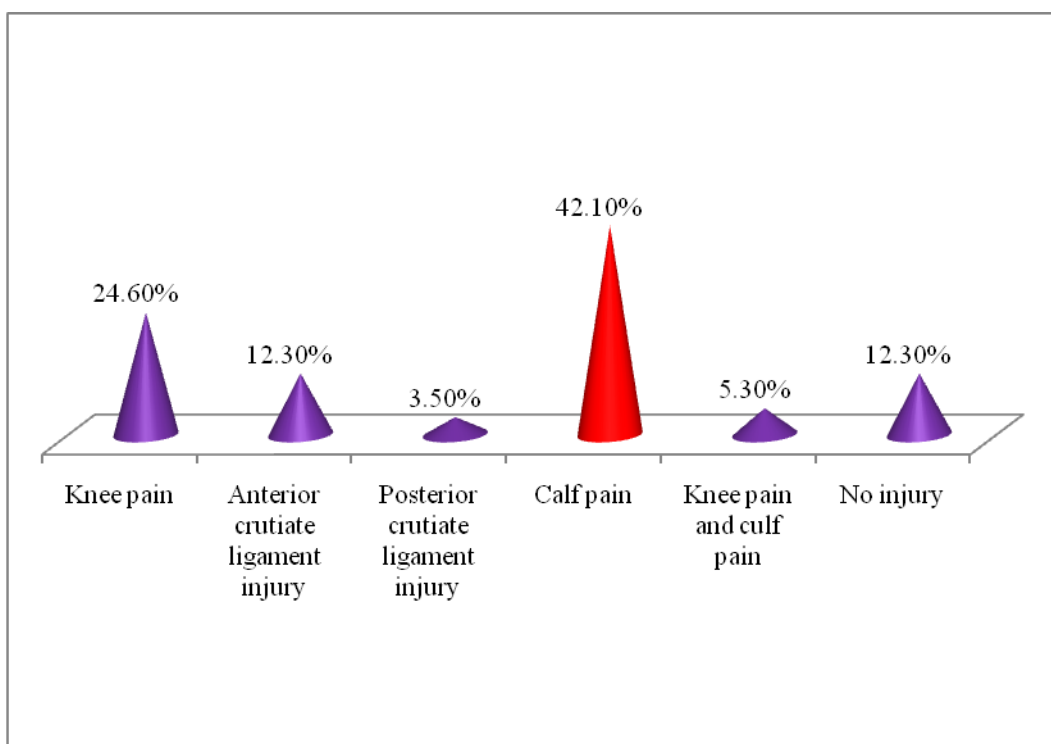


Figure-11: Knee and leg injury.

Ankle injury and foot injury

Among the 57 participants 21 (36.8%) had ankle sprain, 10 (17.5%) had ankle pain, 4 (7%) had foot pain, 5 (8.8%) had heel pain, 1 (1.8%) had stress fracture of MTP, 9 (15.8%) had planter fasciitis, 1 (1.8%) had both ankle pain and heel pain and 1 (1.8%) had both ankle sprain and heel pain in ankle and foot and lastly 5 (8.8%) had no injury in this region.

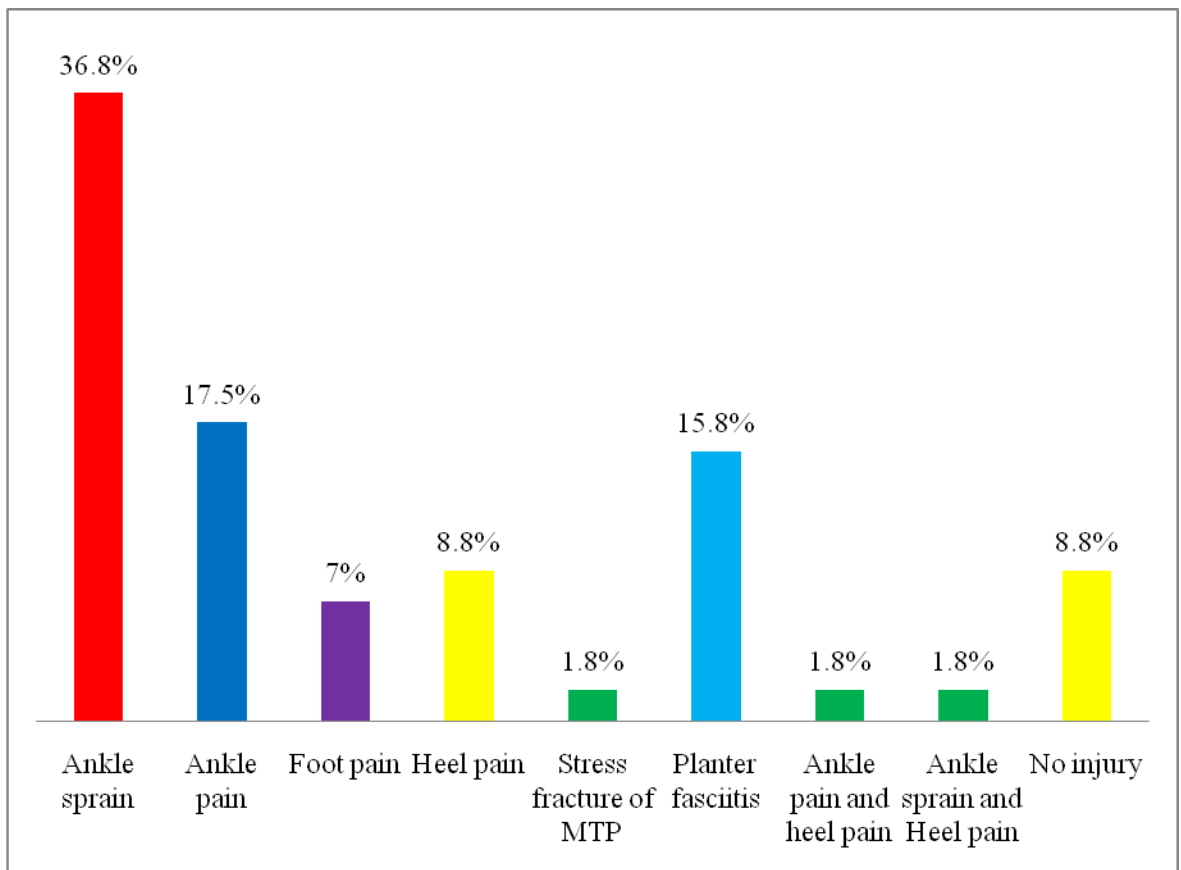


Figure-12: Ankle injury and foot injury.

Type of injury

Analysis shows in column chart the types of injury of the participants and their percentage. Among 57 participant 4 (7.0%) got direct injury, 22 (38.60%) participant got both direct and indirect injury majority of them 31 (54.4%) got indirect or over use injury.

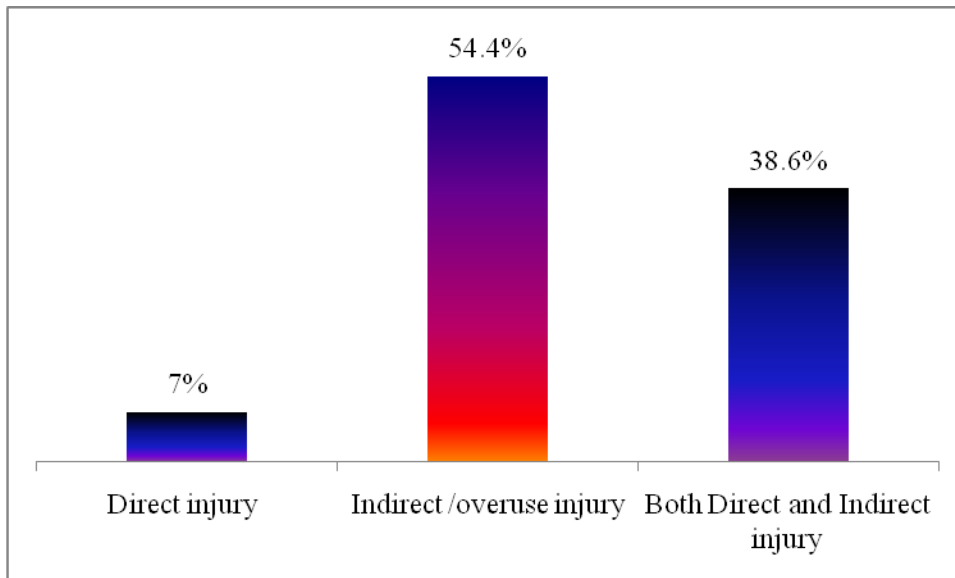


Figure-13: Type of injury.

Severity of injury

Analysis showed that among 57 participant, 5 (18.5%) had mild injury, 14 (51.9%) had moderate injury and 8 (29.6%) had get severe type of injury.

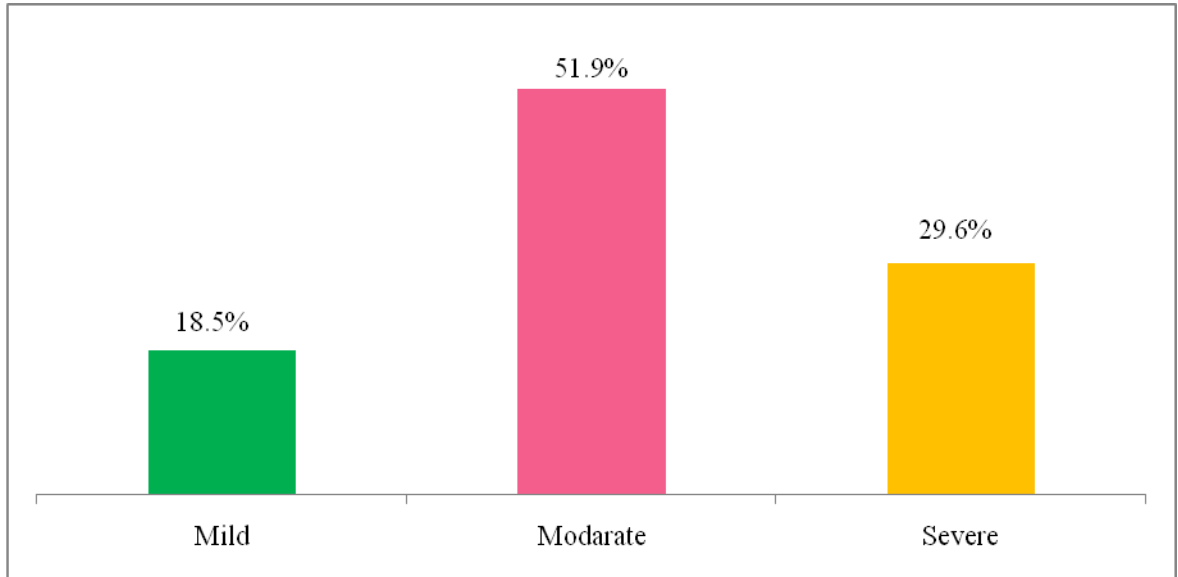


Figure-14: Severity of injury.

Recurrence of injury

Analysis shows that among 57 participants about 21 participants had recurrence and 16 (28.1%) had 2 times, 4 (7.0%) had 3 times and n 1 (1.8%) had 4 times of recurrence of injury during playing and practicing cricket. On the other hand about 36 (63.2%) had no history of recurrence.

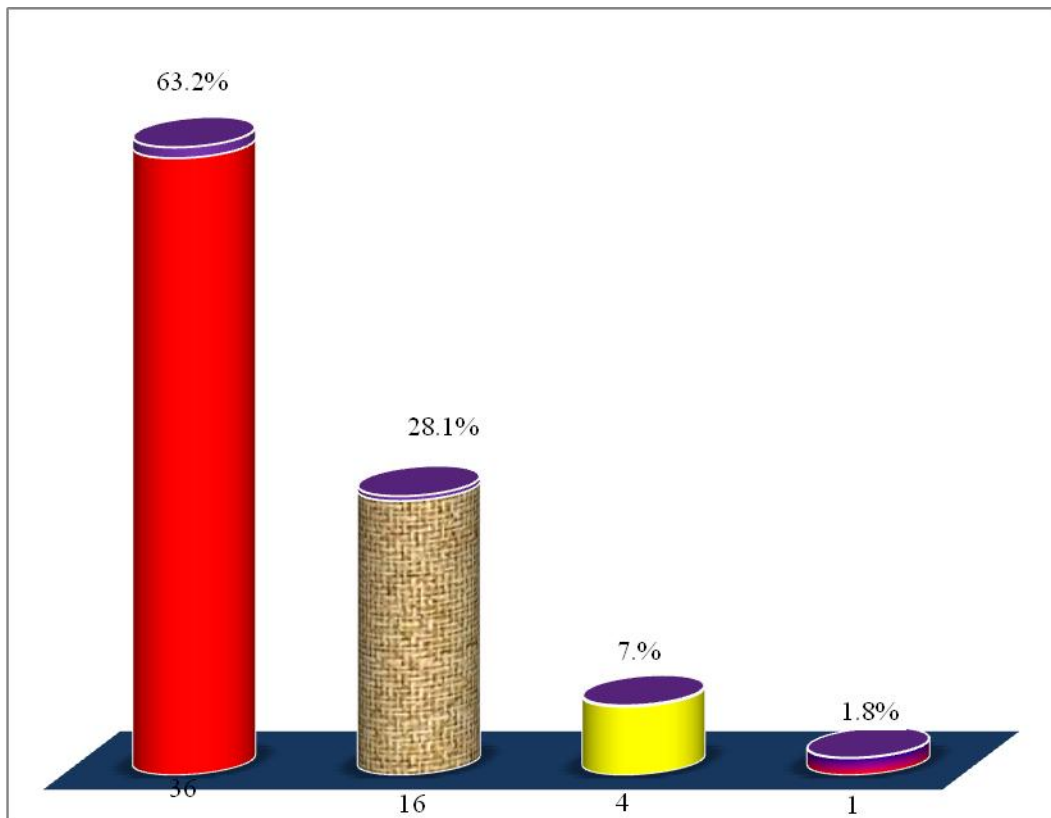


Figure-15: Recurrence of injury.

Recurrent injuries

Analysis shows that about 1 (1.8%) had knee pain, wrist pain, quadriceps strain and shoulder pain, 4 (7.4%) had groin pain, 8 (14.0%) had ankle sprain and 5 (8.8%) had back pain and 36 (63.3%) had no recurrent injury.

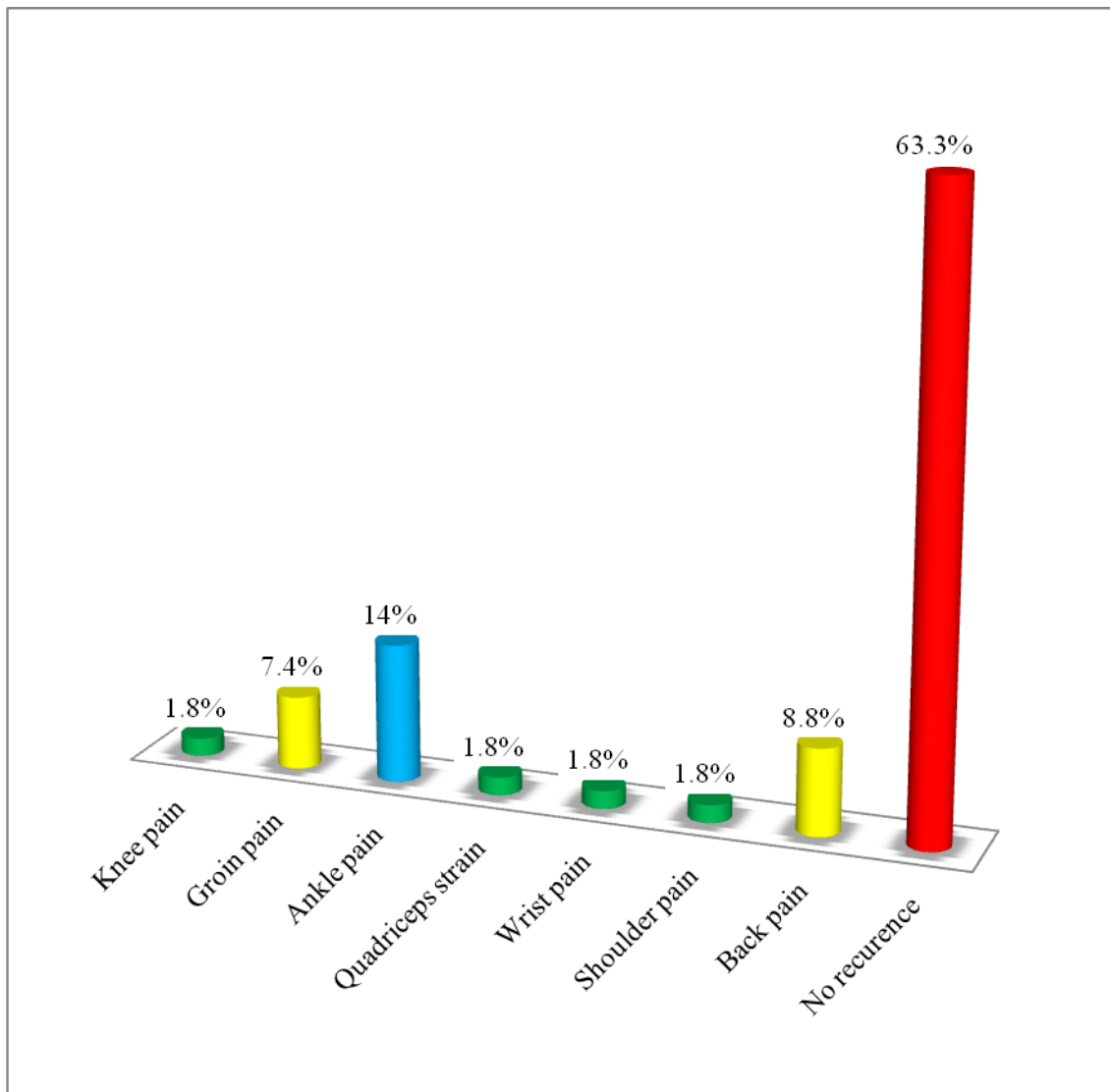


Figure-16: Recurrent injuries.

Out of playing due to injury

The study was conducted on 57 participants of women cricket players of Bangladesh. Out of the participants approximately 16 (28.7%) player was out of playing for 1-7 days, 11 (19.30%) was 10-20 days and 5 (8.77%) was 25-45 days of out of playing. And about 25 (43.9%) player never take break from playing cricket due to injuries.

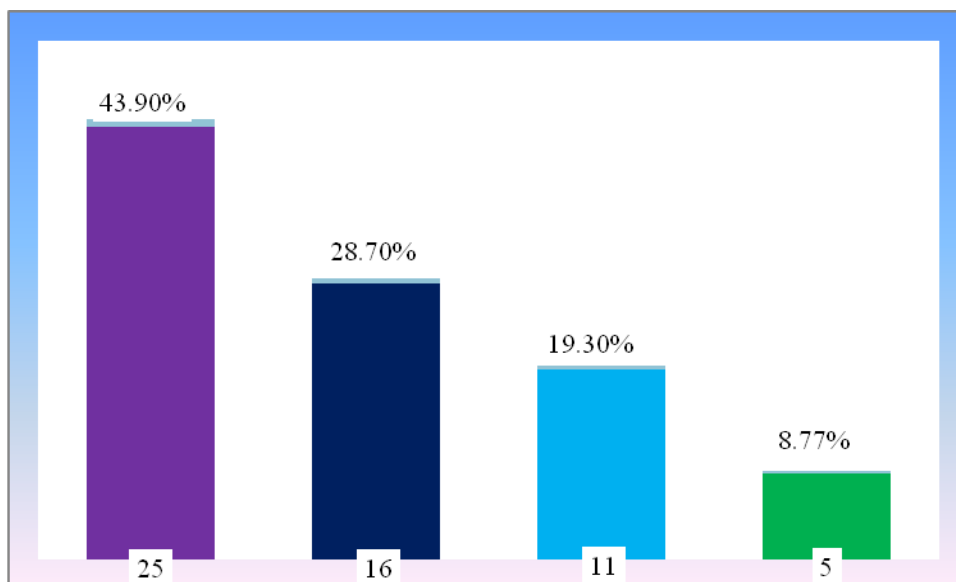


Figure-17: Out of playing due to injury.

Treatment taken

Among all the participant 11 (19.3%) take only medication 9 (15.8%) take only physiotherapy and 38 (64.9%) take combine therapy that means both medication and physiotherapy.

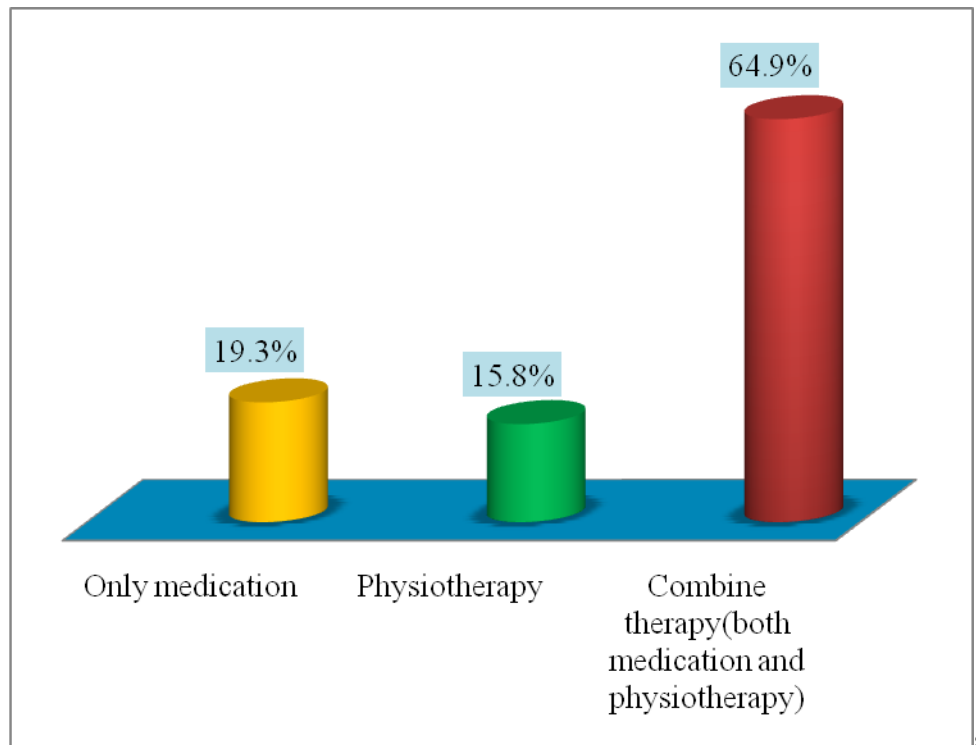


Figure-18: Treatment taken.

Popular and effective treatment option

About 13 (22.8%) women cricket player think that only medication was more effective, 26 (28.1%) think combine therapy but maximum player think physiotherapy was the most effective treatment option and the number was 28 (49.1%) among 57 participant.

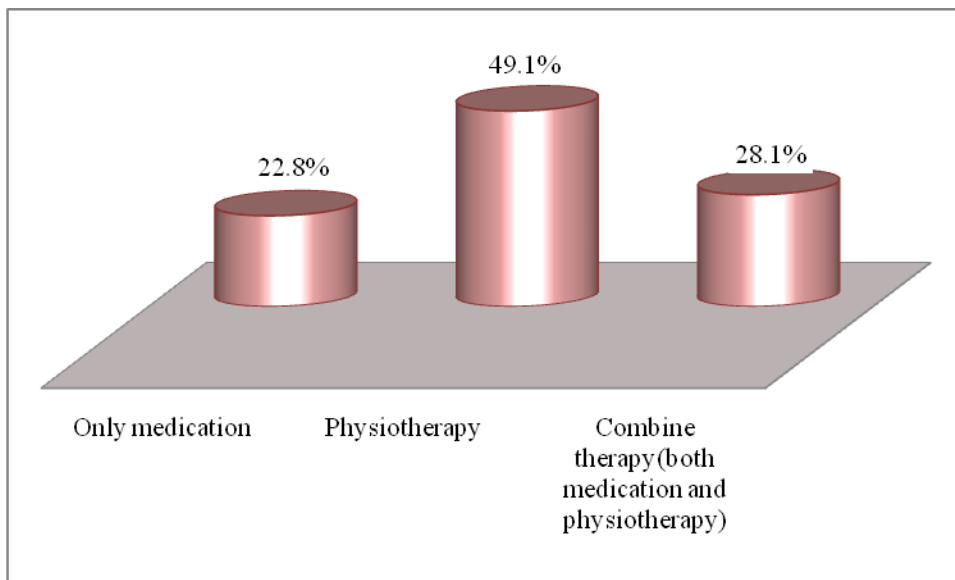


Figure-19: Popular and effective treatment option.

Cross tabulation between age and type of cricket

In the table showed that within the age range of 13-20 years, the number of batsman was 5; bowler 11, both batting and bowling 19 and wicketkeepers was 6. And in the age range of 21-28 years, the number of batsman was 7; bowler 3, both batting and bowling 5 and wicketkeepers was 1 among the 57 participant.

Age	Type of cricket				Total
	Batting	Bowling	Both batting and bowling	Wicket keeping	
13-20 Years	5	11	19	6	41
21-28 Years	7	3	5	1	16
Total	12	14	24	7	57

Table-3: Cross tabulation of participant age and type of cricket.

Association Between age and affected body area

Body region	P-value
Head and neck	0.497
Shoulder injury	0.383
Elbow injury	0.591
Wrist injury	0.667
Hand and finger injury	0.034*
Spine, back and trunk injury	0.334
Hip and Thigh injury	0.146
Knee and leg injury	0.546
Ankle injury and foot injury	0.290

* **Significant**

Table-4: Association between age and affected body area.

The study was conducted on 57 women cricket players of Bangladesh. After conducting this study the following results were comes out from analysis. And this result were compared to other cricket playing countries study such a South Africa, Australia, West India, New Zealand etc and also from some dissertation which was conducted in Bangladesh.

The mean age of the participant in this study is 20, and the minimum age range was 13 years and maximum was 28. According to Gregory, (2004) the mean age of the cricketer was 24 years. According to Stretch (2003), mean age was 16.8 years and according to Dhillon et al. (2012) mean age was 18.9 years. In Australia the age range was 13-19 years (Dennis et al., 2005). In West Indies injuries occurred in the age between 18-37 years and more of them was less than 23 years old (Mansingh et al., 2006). According to Sundaram (2012), the mean age was 17.57 years. According to Gregory et al. (2004), the mean age was 15.3 years.

In this study among the 57 cricketers 12 is batsmen, 14 is bowler, 24 is all rounder (both batting and bowling), and 7 is wicketkeeper. In India, among 95 player, 24 was bowler, 8 was wicket keeper and rest of the player (44) was all rounder (Dhillon, 2012).

In this study among the 57 cricketers 4 (7.0%) had head injury, 14 (24.6%) had neck pain, 2 (3.5%) had eye injury and 14 (24.6%) had facial injury. In South Africa the rate of injuries in head, neck and face accounted for between 20% -25%, and eye injuries between 5.4%-9% (Stretch, 1993). Again Stretch (2003), estimate in his study that the head and neck injury about 7.0%. Zaman (2012) stated in his study only 1 player among 31 players had head injury and the injury was in eye region.

In this study the upper limb injury site consist of Shoulder injuries, elbow injuries, wrist injuries and hand and finger injuries. From the table-2, it is find that Shoulder injury about 59.7%, elbow injury 84.2%, wrist 80.7% and head and finger injury is 31.6%. According to Stretch (1993), the upper limb injury account for 34.1% in all

injuries. Finger injuries account for 13.6% and Shoulder injury was 7.1% (Leary & White, 2000). According to Frost et al. (2012), in New Zealand upper limb accounted for 17.8% and 14.9% injury. 26.8% upper limb injury (Stretch, 2003). In this study the percentage is 26.3 for fracture of phalanges. 10.5% had tendinitis, 15.8% had rotator cuff injury, 52.6% had shoulder pain, and 1.8% had shoulder instability. According to Zaman (2012) among 31 participant, 3 (9.68%) had hand injury and finger injury which include 2 (6.5%) had MCP injury on the other hand in his study, finger injury about 26.3% (Fracture of phalanges). In India, the injury incidence in cricketer was 1.24 per ten thousand hours to play (Dhillon, 2012).

In this study the lower limb injury site consist of hip and thigh injury, knee and leg injuries, ankle and foot injury. From table-2 it is found that, hip and thigh injury about 94.7%, knee and leg injuries 87.7%, and ankle and foot injury is 91% Of all injuries. In South Africa the lower limb accounted for 37.5% of all injuries (Stretch, 1993). Lower limb was the more vulnerable for injury and the percentage was 44.9%, and knee injury 9.9% and foot and ankle injury was 8.7% (Leary & White, 2000). In New Zealand, 47.3% injury accounted in lower limb, where knee 11.2%, thigh 10.8% (Frost et al., 2012). Again according to stretch (2003), injury to the lower limbs was 46.5%. In this study in hip and thigh, 1.8% had fracture of femur, 19.3% had Groin pain, 19.3% had hamstring strain, 47.4% had quadriceps strain, 1.8% had groin pain, quadriceps strain and hamstring strain, 3.5% had groin pain and hamstring strain and 1.8% had groin pain and quadriceps strain. In knee and leg, 24.6% had knee pain, 12.3% had ACL injury, 3.5% had PCL injury, 42.1% had calf pain, 5.3%) had both knee pain and calf pain and about 12.3% had no injury in knee and leg. In ankle and foot 36.8% had ankle sprain, 17.5% had ankle pain, 7% had foot pain, 8.8% had heel pain, 1.8% had stress fracture of MTP, 15.8% had planter fasciitis, and 1.8% had both ankle sprain and heel pain and 1.8% had both ankle sprain and heel pain in ankle and foot and lastly 8.8% had no injury in this region. According to Leary and White (2000), Thigh and calf injury was 24.6%. And 1.2% was ankle injury (Ranson, 2013). According to Zaman (2012) hip & thigh injuries was 5 (16.13%) and it include 1 groin pain, 3 hamstring strain and 1 had quadriceps contusion. Knee and leg injury were present at 4 and among them 2 had ligament injury, 2 had knee pain. Ankle pain 1, ankle sprain 1 and foot injuries were 6 in ankle and foot region.

From table-2 of in this study Spine, back and trunk injury accounted for 57.9% of all injuries. Stretch (1993) estimated in his study that the percentage of back and trunk injuries was 19.3%. Injury to the lumbar spine was 11.0% and trunk 20.8% (Leary & White, 2000) but in this study, back pain is 8.8%. In Australia back pain accounted for 52% among the fast bowler (Dennis et al., 2005). Trunk and back injury in New Zealand was 25.1% and 37.1% (Frost et al., 2012). The incidence of back injuries in Australia was 38% among the fast bowler (Foster, 1989). Trunk and back injury about 19.7% (Stretch, 2003).

In this study, from table-2, it is found that, shoulder, wrist, hip and thigh and knee and leg is the more vulnerable to injury and the injuries are tendinitis, rotator cuff injury, shoulder pain, back pain, groin pain, hamstring strain, quadriceps strain, knee pain, cuff pain, ankle pain, ankle sprain, foot pain, heel pain, planter fasciitis etc. According to Orchard et al. (2002), the most frequent injuries was, fractured facial bone, neck injuries, shoulder injuries, shoulder dislocation, tendinitis rotator cuff injury, wrist and hand injuries, upper limb stress fracture, trunk and back injuries, rib fracture, lower limb groin fracture, hamstring strain injuries and quadriceps strain injuries, knee ligament injuries, foot stress fractures, leg stress fractures, ankle and foot strain, heel and Achilles injuries and also cuff muscle injuries. According to Gregory et al. (2004), the common anatomical site of injuries was, shoulder, rib, low back, thigh, groin, calf, knee and ankle.

In this study among 57 participant 4 (7.0%) got direct injury, 22 (38.60%) participant got both direct and indirect injury majority of them 31 (54.4%) got indirect or over use injury. The rate of acute injury was 57.4% injuries in per 1000 days of playing (Leary & White, 2000). In West Indies, 76% was acute injury and 16% acute or chronic and 8% was chronic injury (Mansingh et al., 2006). On the other hand Gony (2009) state on his study that about 75.6% (n=31) had indirect injury and only 24.4% (n=10) had direct injury among 41 player. Overuse injuries was 18.3% in South African cricketer (stretch, 2003).

Analysis showed in this study that, among 57 participant, 5 (18.5%) had mild injury, 14 (51.9%) had moderate injury and 8 (29.6%) had get severe type of injury. 40.6% injuries reported was severe type of injury (Milsom, 2006).

Analysis shows that in this study, among 57 participants about 21 participant had recurrence and 16 (28.1%) had 2 times, 4 (7.0%) had 3 times and 1 (1.8%) had 4 times of recurrence of injury during playing and practicing cricket. On the other hand about 36 (63.2%) had no history of recurrence. 23.9% was recurrence of old injuries and 22.7% of the new injuries recurrence (Stretch, 1993). In West Indies, 80% got injury in first time and only 10 % recurrence (Mansingh et al., 2006). Among the South African schoolboy cricketers, 58 (86%) of the injuries was first time and about 9 (13.4%) injuries was recurrence of previous injury (Milsom, 2006).

The study was conducted on 57 participants of women cricket players of Bangladesh. Out of the participants approximately 28.7% player out of playing for 1-7 days, 19.30% for 10-20 days and 8.77% was 25-45 days of out of playing. In South Africa, 47.8% player return to play after more than 21 days and 27.2% was out of playing for 1-7 and 8-21 days (Stretch, 1993). In West Indies, 77% player lost time of plating for >21 days and 81% lost days for <4 (Mansingh et al., 2006). Milsom (2006) stated in his study that, he find about 40.6% injuries reported was quite severe and it took the cricketer more than 21 days and 36% injuries allowed the player to return to the sports within 7 days.

About 13 (22.8%) women cricket player think that only medication was more effective, 26 (28.1%) think combine therapy but maximum player think physiotherapy was the most effective treatment option and the number was 28 (49.1%) among 57 participant in this study. According to Zaman (2012), among 31 participant 7 (22.6%) had taken only medications, 4 (12.9%) had taken only physiotherapy and 17 (54.8%) had taken both medication and physiotherapy. And combine treatment was the most effective treatment option.

Among all the participant 11 (19.3%) take only medication 9 (15.8%) take only physiotherapy and 38 (64.9 %) take combine therapy that means both medication and physiotherapy. About 13 (22.8%) women cracker cricket player think that only

medication was more effective, 26 (28.1%) think Combine therapy but maximum player think physiotherapy was the most effective treatment option and the number was 28 (49.1%) among 57 participant. According to Zaman (2012), in his study that among 31 participant 7 (22.6%) had taken only medications, 4 (12.9%) had taken only physiotherapy and 17 (54.8%) had taken both medication and physiotherapy. And combine treatment was the most effective treatment option.

6.1 Conclusion

The field of sports physiotherapy is flourishing day by day. Injuries are very common in sports and also in cricket, and also the demand of physiotherapy increasing as day progresses. In recent years the role of physiotherapy become more specific and the therapist conduct more and more research and designed so many clinical trials in sports injury sector. The physiotherapist plays role in both prevention and management of sports injury and athletic recovery before and after injury. Today the participation of women in sports and exercise increased day by day and also the women obtain much awareness about the importance of physiotherapy and exercise for long time well-being and health and also for prevention of sports injuries.

Today cricket demands the greater physical effort for players during their vital stage in career. It is the duty of the players, medical support team and the administrators to put in place measures to ensure that unnecessary injuries do not prevent players from reaching their full potential. To understand further the incidence and nature of injuries, it is recommended that research is carried out to assess the number of injuries sustained in relation to the exposure time to training, practice, and matches for junior and international player. In this study it is shown that hip, knee and ankle are most vulnerable for injury. Shoulder also in at risk of injury. If team management take proper steps to prevent injuries of those regions, than the incidence of recurrence of injury will be reduced. Women cricketers are the most vulnerable to injury than man because of their physical structure, so it is necessary to take very careful steps to prevent the incidence of injury and thereby enrich the potentiality of women cricket player.

6.2 Recommendations

The aim of the study was to find out the common injuries among women cricket players in Bangladesh. Though the study had some limitations but identified some further step that might be taken for the better accomplishment of further research. The main recommendations would be as follow:

- The duration of the study was short, so in future wider time would be taken for conducting the study.
- Only 57 participants as the sample of this study, in future the sample size would be more.
- This study only find out the common injuries but in further study could be carried out to find out the risk factor for these injuries and also the effectiveness of physiotherapy treatment among the injuries.
- In this study, took the participants only from the three selected area of Bangladesh as a sample for the study. So for further study investigator strongly recommended to include the women cricketer from all over the Bangladesh to ensure the generalizability of this study.

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APPENDIX

VERBAL CONSENT FORM

(Please read out to the participants)

Assalamualaikum/Namasker, my name is Sanchita Rani Paul, I am conducting this study for a B. sc in Physiotherapy project study dissertation titled “**Common injuries among women cricket players in Bangladesh**” under Bangladesh Health Professions Institute (BHPI), University of Dhaka. I would like to know about some personal and other related information regarding common injuries among athletes. You will perform some tasks which are mention in this form. This will take approximately 15 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 sports area, so your participation in the research will have no impact on your present or future treatment in this area. 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 and also all information will be destroyed after completion of the study. 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 me, and/or Md. Shofiqul Islam, Assistant Professor, Department of Physiotherapy, BHPI, CRP, Savar, Dhaka.

Do you have any questions before I start?

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

Yes

No

Signature of the Participant _____ Date:

Signature of the Interviewer _____ Date:

Title: Common injuries among women cricket players in Bangladesh

Questionnaire

1. Name of the participant
2. Age Years
3. Address(where play)
4. How long you playing cricket? Ans: Years.

5. What types of cricket do you play?

1=Batting

2= Bowling

3= Both batting and bowling

4= wicket keeping

6. What was your injury?

Head and neck:

1= Head injury

2= Neck pain

3= Eye injury

4= Facial injury

5= Other

6= No injury

Shoulder injury:

1= Dislocation

2= Tendinitis

3= Rotator cuff injury

4= Shoulder pain

5= Shoulder instability

6= Other

7= No injury in shoulder

Elbow injury:

1= Tennis elbow

2= Golfer elbow

3= Other

4= No injury

Wrist injury:

1= Fracture

2= Wrist pain

3= Carpal tunnel syndrome

4= Other

5= No injury

Hand and finger injury

- 1= Fracture of phalanges
- 2= Fracture of metacarpals
- 3= Other
- 4= No injury

Spine, back and trunk injury:

- 1= Rib fracture
- 2= Back pain
- 3= Chest pain
- 4= Fracture of vertebra
- 5= Other
- 6= No injury

Hip and Thigh injury

- 1= Hip dislocation
- 2= Fracture of femur
- 3= Groin pain
- 4= Hamstring strain
- 5= Quadriceps strain
- 6= Other
- 7= No injury

Knee and leg injury:

- 1= Knee pain
- 2= Anterior crutiate ligament injury
- 3= Posterior crutiate ligament injury
- 4= Miniscal injury
- 5= Calf pain
- 6= Stress fracture of tibia
- 7= Other
- 8= No injury

Ankle injury and foot injury:

- 1= Ankle sprain
- 2= Ankle pain
- 3= Foot pain
- 4= Heel pain
- 5= Stress fracture of MTP
- 6= Planter fasciitis
- 7= Other

8= No injury

7. What was the type of injury?

1= Direct injury (direct blow).

2= Indirect /overuse injury

8. The severity of injury?

1= Mild

2= Moderate

3= Severe

9. How many times did you get injury last year?

Ans:

10. Among them how many times it was a recurrence of injury? And which injury?

Number of injury	Type of injury

11. What type of treatment you have taken?

1= Only medication

2= Physiotherapy

3= Combine therapy (both medication and physiotherapy)

12. What treatment option is most effective for you?

1= Medication

2= Physiotherapy

3=Combine therapy (both medication and physiotherapy).

Permission Letters



বাংলাদেশ হেল্থ প্রফেশন্স ইনষ্টিটিউট (বিএইচপিআই)
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তারিখঃ ২২.০৩.২০১৩

প্রতি
চেয়ারপার্সন
বাংলাদেশ মহিলা ক্রিকেট উইং
বাংলাদেশ ক্রিকেট বোর্ড
ঢাকা।

বিষয়ঃ 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 হেল্থ প্রফেশন্স 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 বাধ্যতামূলক।

বিএইচপিআই'র ৪র্থ বর্ষ বিএসসি ইন ফিজিওথেরাপী কোর্সের ছাত্রী সফি়াতা রানী পাল তার রিসার্চ সংক্রান্ত কাজের তথ্য সংগ্রহের জন্য আপনার সুবিধামত সময়ে আপনার প্রতিষ্ঠানে সফর করতে আশ্রয়ী। তার রিসার্চ শিরোনাম “Common injuries among women cricket player in Bangladesh.”

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

ধন্যবাদান্তে

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



Received by

28.3.13
Jamnaji Ferdouse Munnir
Executive, Women's Wing
Bangladesh Cricket Board

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

বাংলাদেশ ক্রীড়া শিক্ষা প্রতিষ্ঠান
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স্মারক নং-৩৪.০৪.০২০০.০০১.০০.৬২১.১২- ২৭৪

তারিখ : ০৯ চৈত্র, ১৪১৯ বঙ্গাব্দ
০৬ মার্চ, ২০১৩ খ্রিষ্টাব্দ

প্রেরক : পরিচালক (প্রশাসন ও অর্থ)
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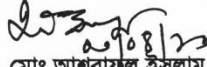
প্রাপক : জনাব মোঃ ওবায়দুল হক
সহকারী অধ্যাপক ও কোর্স-কো অর্ডিনেটর
ফিজিওথেরাপী বিভাগ
বাংলাদেশ হেল্থ প্রফেশনাল ইনস্টিটিউট (বিএইচপিআই)
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বিষয় : রিসার্চ প্রজেক্ট (Dissertation) এর জন্য বিকেএসপি পরিদর্শন ও তথ্য সংগ্রহ প্রসঙ্গে।

সূত্র : ২২/০৩/২০১৩ খ্রিঃ তারিখে দাখিলকৃত আপনার পত্র।

উপর্যুক্ত বিষয় ও সূত্রের প্রেক্ষিতে জানানো যাচ্ছে যে, বিএইচপিআই'র ৪র্থ বর্ষের বিএসসি ইন ফিজিওথেরাপী কোর্সের ছাত্রী সঞ্চিতা রানী পাল-এর "Common injuries among women cricket player in Bangladesh" শীর্ষক রিসার্চ কাজের তথ্য সংগ্রহের জন্য আগামী ৩১/০৩/২০১৩ ও ০১/০৪/২০১৩ খ্রিঃ তারিখে বিকেএসপি পরিদর্শনের অনুমতি প্রদান করা হল।

ধন্যবাদান্তে,


(ড. মোঃ আশরাফুল ইসলাম)
পরিচালক (প্রশাসন ও অর্থ)
বিকেএসপি।

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অনুলিপি সদয় অবগতি ও কার্যার্থে :

- ১। মহাপরিচালক, বিকেএসপি (সদয় অবগতির জন্য)।
- ২। পরিচালক (প্রশিক্ষণ), বিকেএসপি।
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- ৫। চীফ কোচ (ক্রিকেট), বিকেএসপি।
- ৬। নিরাপত্তা কর্মকর্তা, বিকেএসপি।
- ৭। সংশ্লিষ্ট নথি।



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তারিখঃ ২২.০৩.২০১৩

প্রতি
প্রেসিডেন্ট/সচিব/সহ-সচিব
বগুড়া ক্রীড়া সংস্থা
মহিলা ক্রিকেট, বগুড়া।

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 হেল্থ প্রফেশন্স ইনস্টিটিউট (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 বাধ্যতামূলক।

বিএইচপিআই'র ৪র্থ বর্ষ বিএসসি ইন ফিজিওথেরাপী কোর্সের ছাত্রী সঞ্চিতা রানী পাল তার রিসার্চ সংক্রান্ত কাজের তথ্য সংগ্রহের জন্য আপনার সুবিধামত সময়ে আপনার প্রতিষ্ঠানে সফর করতে আশ্রয়ী। তার রিসার্চ শিরোনাম "Common injuries among women cricket player in Bangladesh."

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

ধন্যবাদান্তে

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