Clinical features, functionality and quality of life among cricketers having ankle sprain

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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.

CLINICAL FEATURES, FUNCTIONALITY AND QUALITY OF LIFE AMONG CRICKETERS HAVING ANKLE SPRAIN AT BKSP.

Submitted by **Mitanur Islam Mitu** for partial fulfilment of the requirements for the degree of Bachelor of Science in Physiotherapy (B.Sc. PT).

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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 from my Physiotherapy Department , Bangladesh Health Professions Institute (BHPI) .

Signature: Mitanur Islam Mitu Date: 01 - 12 - 2019

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CONTENTS

Acknowledgement

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Abstract

Background An ankle sprain is an injury to the tough bands of tissue (ligaments) that surround and connect the bones of the leg to the foot. Wrench or twist the ligaments (of an ankle, wrist, or other joint) violently to cause pain and swelling but not dislocation. A sprain, also known as a torn ligament, is damage to one or more ligaments in a joint, often caused by trauma or the joint being taken beyond its functional range of motion. The severity of sprain ranges from a minor injury which resolves in a few days to a major rupture of one or more ligaments requiring surgical fixation and a period of immobilization. ***Purpose*:** The purpose of the study was to explore the clinical feature, functionality and quality of life among cricketers having ankle sprain. ***Objectives*:**To find out the clinical feature, functionality and quality of life among cricketers having ankle sprain in BKSP. ***Methodology:*** A cross sectional study was chosen to conduct this study and as appropriate to achieve the

aims.***Results:***The study showed that among 50 participant most of the players experience moderate pain, moderate stiffness and the presence of swelling is rare.The study also showed that the result where most of the player loss moderate functional ability and mild quality of life during ankle sprain. There is significant difference in pain between male and female in case of increasing. ***Conclusion:***More research should now be undertaken on sports related injuries of the cricketers, with an emphasis on larger sample sizes and response rate to be able to generalize the results and conclusions.

Key words: Sport injury, Ankle Sprain, Cricketers, Clinical feature , Functionality, Quality of life.

CHAPTER –I: INTRODUCTION

1.1 Background

Sport is a common context for injury. It is the most common reason for hospital-treated injury in adolescents and young adults, and there is some evidence that injury rates at the population level are increasing. Sports injuries can occur to participants across all forms of sport ranging from elite/professional sport to competitive sport in clubs/colleges/schools to school sport to a range of fitness and physical activity programs usually undertaken for health and social reasons. Over recent years, evidence has accumulated that the majority of these injuries should be preventable if sports injury interventions are successfully implemented. The challenge remains to demonstrate the effectiveness of many sports injury interventions in appropriate real-world settings and to better understand the drivers and barriers to sports injury prevention implementation efforts. Sports injuries occur when athletes are exposed to their given sport and they occur under specific conditions, at a known time and place.

Sports injury is defined by the International Olympic Committee as new or recurring musculoskeletal symptoms or signs that develop during competition or training and that require medical attention (Engebretsen et al., 2013).

Sports injuries have long been recognized as a global health problem requiring a public health approach to reduce their impact (Timpka et al., 2008).

A concern from a global perspective, however, is that most population-based sports injury rates are based on data reported in developed countries, and little is known about sports injuries in undeveloped nations. A lack of clear definitions of sports injuries have also made it difficult to report accurate injury rates and make comparisons between studies. While clear definitions of sports injuries that represent the holistic views of clinicians, athletes, and sporting institutions have been suggested (Timpka et al., 2014), there is no consistency or standardized definition of what a sports injury is, and several injury definitions have been proposed from time loss, to medical attention, to any physical complaint (Clarsen et al., 2013). For example, some sports injury studies

define an injury as “an event occurring during a match or training session that required medical attention (including self-treatment), or caused the player to miss at least one scheduled match or team training session” (McNoe and Chalmers, 2010), others define it as “any injury that prevents a player from taking a full part in all training and match play activities typically planned for that day, where the injury has been there for a period greater than 24 h from midnight at the end of the day that the injury was sustained” (Blake et al., 2014).

In ‘Traditional Chinese Medicine Cupping Therapy (Third Edition)’, IlkayZihniChiraliMBAcC RCHM(2014) said that- “Sports injuries are quite common, especially for people who tend to be active or exercise a lot. Over the years I have treated numerous sportsmen / women, applying cupping therapy in conjunction with acupuncture and many times on its own with numerous benefits to the athlete. Although many sportsmen / women come seeking help as a result of an injury, I have also treated many, and in particular long-distance (endurance) runners, before the event took place. Without any overstatement, I can testify that almost all athletes reported some form of improvement to their overall health, including feeling ‘refreshed’, ‘light’ and ‘more flexible’, and having ‘less pain’ and ‘more energy’. For the reasons I have listed below, I believe cupping therapy can be employed quite successfully during the management phase of many injuries as well as before the sporting activity, in order to help the athlete deliver their maximum performance.”

Sports injury classification is primarily tied to chronicity. The International Olympic Committee defines sports injury as new or recurring musculoskeletal complaints incurred during competition or training that require medical attention, regardless of the potential absence from competition or training (Engebretsen et al., 2012). Others have suggested that a definition of sports injury should require restricted activity for at least 1 day (Swenson et al., 2009).

There has been a sharp increase in the amount of cricket being played worldwide, which led to an increased incidence of back injuries in fast bowlers, ankle injuries in fielders and muscle strains of both upper and lower limbs. Extensive screening and

intervention in fast bowlers has led to a decrease in the time lost due to injury. Over the last three seasons in West Indies cricket however, there has been an increase in posterior ankle impingement, most associated with large astrigons'. These have been exclusively in fast bowlers, at all levels of cricket.

In 'West Indian med. j. vol.60 no.1' Mona Jan. 2011, describes a condition not previously associated with cricket. The sudden increase in incidence suggests that screening and preventative measures may be required for all fast bowlers as was employed in back injuries.

According to NIH (National Institute of Health), "There are two kinds of sports injuries. Acute injuries happen suddenly, such as sprained ankles. Chronic injuries happen after you play a sport or exercise over a long period of time. A sprain is an injury to a ligament (tissue that connects two or more bones at a joint). When a sprain happens, one or more ligaments is stretched or torn."

1.2 Rationale

Ankle sprain is a sports injury. Physiotherapy is a significant part to treat this condition. As the physiotherapy profession is newly introduced in Bangladesh, many people are not aware of its purpose. But it is an important part of health care to prevent diseases as well as to improve or maximize independence in people with disabilities. If we can find out the clinical features and functionality of ankle sprain then we can apply proper physiotherapy and can improve the quality of life of the cricketers. Therefore, physiotherapy can play an absolute role in the management of the patients with ankle sprain. Eventually, other professionals as well as general public will become aware about this service and this will be helpful to establish this profession at different institution, hospitals and clinics to fulfill the health care needs of the patient. The target for rehabilitation of ankle sprain is to enable the highest functional independence level possible for the individual and to increase the quality of life despite the current limitations. However, conventional treatment methods used for this purpose are insufficient in enabling functional recovery. Several studies are made on the effectiveness of physiotherapy in post- ankle sprain rehabilitation. Physiotherapy will help us in improving ankle functions faster & motivate the patients also. By this result we get appropriate measure of improvement of lower motor recovery such as leg function after ankle sprain. The study will also help to play more attention to perform ankle function. The researcher would like to conduct this study in order to develop an evidence to improve ankle functions in relation to conservative treatments of ankle sprain patients. Physiotherapy intervention will be established easily for ankle sprain condition. And as a physiotherapist we can easily use that intervention for treating a sport person. A new dimension will be added for improving the ankle function of the individuals having ankle sprain. So that after doing this study patient will be more aware of physiotherapy management. In Bangladesh, most of the patients come at later stage and their improvements are not satisfactory. It is thought, if we can identify the specific factors, then we can give concentration on those specific factors for the better outcome of the people who are suffering from such type of injuries and they will get

maximum benefit from physiotherapy treatment. As a result it will improve the functional outcome, reducing limitation ofactivity.

1.3. Aim

To find out the clinical features, functionality and quality of life among cricketers having ankle sprain.

1.4. Objectives

1.4.1. General objectives

To investigatethe clinical features, functionality and quality of life among cricketers having ankle sprain in BKSP.

1.4.2. Specific objectives

- To determine the clinical features of ankle sprain amongcricketers in this study.
- To compare the functionalityhaving ankle sprain.
- To find out the quality of life of sprainedankle

1.5 Hypothesis

1.5.1 Null Hypothesis

- There is significant difference between male and female in case of increase or decrease of pain.
- There is significant difference in the ability between male and female in case of functional ability.
- There is significant difference in the quality between male and female in case of life spent.

1.5.2. Alternative Hypothesis

- There is significant difference between male and female in case of increase or decrease of pain .
- There is no significant difference in the ability between male and female in case of functional ability.
- There is no significant difference in the quality between male and female in case of life spent

1.6. Operational Definitions

Sports injury

Sports injuries are injuries that occur during sport, athletic activities, or exercising, Sports injury is defined by the 'International Olympic Committee' as new or recurring musculoskeletal symptoms or signs that develop during competition or training and that require medical attention

Sprain

Wrench or twist the ligaments (of an ankle, wrist, or other joint) violently so as to because pain and swelling but not dislocation. A sprain, also known as a torn ligament, is damage to one or more ligaments in a joint, often caused by trauma or the joint being taken beyond its functional range of motion. The severity of sprain ranges from a minor injury which resolves in a few days to a major rupture of one or more ligaments requiring surgical fixation and a period of immobilization.

Ankle Sprain

Ankle sprain is an injury to the tough bands of tissue (ligaments) that surround and connect the bones of the leg to the foot. Sprained ankles most commonly involve injuries to the ligaments on the outside of the ankle.

Cricketers

Cricket is a bat-and-ball game played between two teams of eleven players on a field at the centre of which is a 20-metre pitch with a wicket at each end, each comprising two bails balanced on three stumps. And those who play cricket are called cricketers.

Effectiveness

Effectiveness is the capability of producing a desired result. When something isdeemed effective, it means it has an intended or expected outcome, or produces adeep, vivid impression.

1.7. List of Variables

Independent Variables:

1. Age
2. Sex
3. Role of players
4. Duration of training

Dependent Variables:

1. Ankle sprain
2. Clinical features
3. Quality of life
4. Functionality

CHAPTER –II: LITERRATURE REVIEW

Ankle sprains are one of the most common and burdensome musculoskeletal injuries and are associated with a high rate of visits to the emergency department. In Canada, ankle sprains account for 7.5% of injury related visits, about 725 cases annually, which represents an annual rate of presentation to an emergency department of five per 1000 people. Nearly all ankle sprains are simple grade 1 (mechanically stable) or grade 2 (some joint laxity) ligament sprains. Grade 3 sprains (clinical and/or radiological evidence of instability) represent a small minority. Although the prevalence of grade 3 sprains is low, there is good evidence to support the use of immobilization and, occasionally, surgical correction in the management of these injuries. Yet clinical standards for the acute management of grade 1 and 2 ankle sprains are not well defined. (Brison et al., 2016).

An ankle sprain is an injury to the tough bands of tissue (ligaments) that surround and connect the bones of the leg to the foot. The injury typically happens when you accidentally twist or turn your ankle in an awkward way. This can stretch or tear the ligaments that hold your ankle bones and joints together. All ligaments have a specific range of motion and boundaries that allow them to keep the joints stabilized. When ligaments surrounding the ankle are pushed past these boundaries, it causes a sprain. Sprained ankles most commonly involve injuries to the ligaments on the outside of the ankle (Healthline).

Ankle ligament sprains are the single most common sports injury, accounting for 19–23% of all sports injuries presenting to accident and emergency (A&E) departments (Boyce et al., 2004)

An ankle sprain often occurs when the foot suddenly twists or rolls, forcing the ankle joint out of its normal position. During physical activity, the ankle may twist inward as a result of sudden or unexpected movement. This causes one or more ligaments around the ankle to stretch or tear. Some swelling or bruising can occur as a result of these tears. You may also feel pain or discomfort when you place weight on the affected area. Tendons, cartilage, and blood vessels might also be damaged due to the sprain. Ankle sprains can happen to anyone at any age. Participating in sports, walking on uneven

surfaces, or even wearing inappropriate footwear, all these can cause this type of injury (Healthline).

It had been estimated that an ankle injury occurs every day per 10000 of the population (Karlsson et al., 1996).

However, despite the high incidence of this injury, there often appears to be no common regimen for their management, with a wide spectrum of treatment options available. In most A&E departments, patients are given an elastic support bandage. But in some departments, a wool and crepe wrap round bandage is used. It is also not uncommon for elastic taping to be applied. These management strategies are often passed from senior to junior ranks with only anecdotal evidence to justify their use. With the medical community moving towards the practice of evidence based medicine, research is required to validate current treatment concepts to determine the optimum functional outcome (Eriksson et al., 1996)

Ankle sprains had been classified into grades I, II, and III according to macroscopic appearance and clinical findings. For the purpose of this study, the terms mild, moderate, and severe were used corresponding to grades I, II, and III respectively. A mild ankle sprain presents with minimal swelling, localized tenderness, and minor functional deficit. This type of injury generally does not require x- ray examination. Moderate and severe ankle sprains encompass a spectrum of significant pain, swelling, hematoma formation, difficulty or inability to weight bear, and degrees of functional impairment. A radiograph is required to exclude associated fractures. Mild ankle sprains were not included in the study. Management strategies can be divided into three main categories: cast immobilization, operative repair, and functional treatment (bandage or ankle brace and mobilization). A diverse array of studies is present in the literature comparing one of these methods against another. As a result of the heterogeneous nature of the various research projects, they perform poorly under meta-analytical review. It is difficult to compare the results of studies directly, but a few common themes have emerged. Operative repair may be advocated for the definitive treatment of a severe ankle sprain resulting in instability, but studies have shown little long term benefit over conservative management (Karlsson et al., 1996.).

Several trials have been undertaken in recent years to evaluate the efficacy of supervised programs of physiotherapy in improving outcomes of ankle sprains and accelerating return to activity- an effort to reduce the likelihood of short and long term morbidity,. (Weinstein et al.,1993).

The optimal treatment for ankle sprains remains uncertain. Protection, rest, ice, compression, and elevation, synonymous with management of acute soft tissue injury, suggest a passive approach to treatment. Many accident and emergency departments favor non-weight bearing using crutches, with others favoring rest and immobilization with a cast, for up to two weeks (Cooke et al., 2003).

Cricket is a bat-and-ball game played between two teams of eleven players on a field at the centre of which is a 20-metre (22-yard) pitch with a wicket at each end, each comprising two bails balanced on three stumps. The batting side scores runs by striking

The ball bowled at the wicket with the bat, while the bowling and fielding side tries to prevent this and dismiss each player (so they are "out"). Dismissal means being bowled, when the ball hits the stumps and dislodges the bails, and by the fielding side catching the ball after it is hit by the bat, but before it hits the ground. When ten players have been dismissed, the innings ends and the teams swap roles. The game is adjudicated by two umpires, aided by a third umpire and match referee in international matches. They communicate with two off-field scorers who record the match's statistical information.

CHAPTER: III METHODOLOGY

3.1 Study design

The purpose of the study is to find out the clinical feature, functionality and quality of life of cricketers having ankle sprain. To conduct this study, quantitative research model in the form of a cross section type of survey design was used. 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 usedto measure characteristics of a population. The advantages of survey design are that the investigator van reachesa large number of respondents with relatively minimal expenditure, numerous variablescan be measured by a single instrument, and statistical manipulation during the data analytical phase can permit multiple use of the dataset. (Dopoy&Gitlin 1998).

3.2 Study site

The sites of the study are BKSP

3.3Study population

Populations werethe injured Cricketersof BKSP who had injuries in between last one year of cricket playing.

3.4Samplingprocedure

3.4.1 Sample selection

Samples were selected by convenience sampling procedure, because thecricket players remain invarious tournamentson national and international level throughout the year and in convenience sampling subjects are chosen who can be studied most easily, cheaply and quickly. (Bailey 1997).

3.4.2Inclusion criteria

The subjects were cricket players who had injuries while playing orinvolving practicein between last one year. The subjects who had available documents in their medical report file.

3.4.3Exclusion criteria

Thecricket players, who had no injuries in between last one year and had no interest or willingness tobe participant, were excluded.The subjects who did not have available documents about their conditions in their medical report file, were also excluded.

3.5Sample size

Sampling procedure for cross sectional study does by following equation

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

Here,

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

P=0.075

q=1-p

d=0.05

The researcher aimed to focus his study by 107 samples following the calculation above initially. But as the study was done as a part of fourth professional academic research project and there were some limitations, so the researcher had to limit with 50 cricket players as sample for this study.50 cricket players were taken as sample by convenience sampling procedure, the subjects who had faced injuries in the last one year.

3.6Data collection procedure

Though there are several ways of collecting data,it is easy and reliable when the questionnaire is completed or filled up in the presence of the researcher (Bailey 1997). Subjects were chosen under convenience sampling procedure and the data were taken from the previous documents and filled up the questionnaire form by the researcher.Data collection is one of the most crucial parts of research. For this study data collection includes-method of data collection, materials sued for data collection and duration.

3.6.1 Method of data collection

The datawere collected from the filed data of BKSP. Data were collected by using aclose endedstructured questionnaire. Questionnaire is used because questionnaire is still a very popular and very useful technique of data collection with in the health care area (Hicks 1999).Additionally the aim of the study was to identify the common injuries among cricketplayers of BKSP. So, it is easier to identify these problems by using questionnairesthan 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.Questionnaire was used to collect the data from the previous documents retrospectively.

3.6.2 Materials used for data collection

1. Questionnaire.
2. Pens.
3. Diary.

3.6.2.1 Questionnaire

For data collection English questionnaire was used. The samples of the study were the injured cricket players of BKSP.

The questions of the questionnaire were closed ended questions, which were set up sequentially. In the questionnaire there were 42 questions. The questionnaire was set in such a pattern that was available in the filed data. Thus it has been tried to collect various informationabout the ankle sprain of the cricket players and to find out and

fulfill the objectives of the study. These questions includes: age; gender; specialty of cricket plays; clinical features; function, activities of daily living; function sports and recreational activities; quality of life.

3.6.3. Duration of data collection

Data was collected within 3weeks of time. Within 22/08/2019 to 15/09/2019 data were collected carefully as much as possible from the filed data. To collect datanecessary time was taken, for eachsample. This time varied for each participant. In general, each questionnaire took approximately 10-15 minutes to complete.

3.7Data analysis

After collecting data, these were entered into SPSS 20 software package. Descriptive statistics was used to analyze data and outcome was displayed as charts and graphs.

3.8 Statistically test

For the significance of the study , a statistical test was carried out. Statistical analysis refers to the well-defined organization and interpretations of data by systemic and mathematical procedure and rules (Depoy&Gitlin, 2015) . The unpaired T test was done for the analysis of data.

3.9Ethical considerations

A formal project proposal was submitted to the department of physiotherapy and after verifying that, the proposal was accepted by the Ethical Review Committee (ERC). Ethical principles of WHO and BMRC were followed in this study. This is purely an observational study. That is why nothing was intervened and thus ethical issues were minimized. The permission for data collection was obtained from the BKSP. This study was not associated with the treatment procedure. The authorities 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 gave permission for data collection from their previous documents of the last year.

3.9Limitation of study

The study should be considered in light of the following limitations. Though the expected sample size was 107 for this study but due to resource constrain researcher could manage just 50 samples which is very small to generalize the result for the wider population of the cricket players. Samples were selected by convenience sampling procedure. There are a few literatures aboutthe common injuries among the injured cricket players in the perspective of Bangladesh so it is difficult to compare the study with the other research. The researcher was able to collect data only from 1 selected areas BKSP for a short period oftime which will affect the result of the study to generalize for wider population. In this study, the types of bowlers as like as fast bowlers, medium pacers and spin bowlers were introduced as a whole in terms of bowlers. Specific documents were not eligible. The questionnaire was developed through searching sufficient literature and specially according to the available well documented data of BKSP but considering the context of the demography of the population a pilot study would substantial before developing questionnaire.

CHAPTER -IV: RESULTS

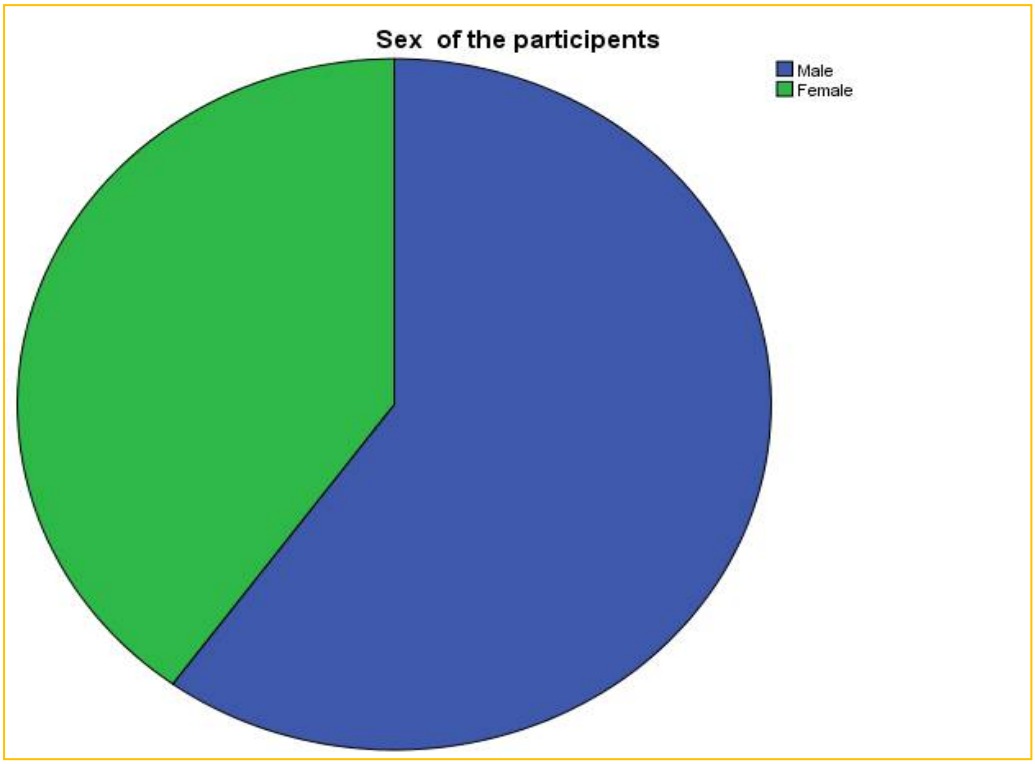
Age of the participants

Total 50 participants were selected in this study. However, among the 50 participants 7(14.0%) participants were under 13(12-13) years, 13 (26.0%) were under 15(14-15) years, 15 (30.0%) were under 17(16-17) years, 12 (24.0%) were under 19(18-19) years and 3 (6.0%) were under 21(20-21) years. Minimum age range was 13 years and maximum age range was 21 years.

Age of the participants	Number	Percentage
12-13 years	7	14
14-15 years	13	26
16-17 years	15	30
18-19 years	12	24
20-21 years	3	6
Total	**50**	**100**

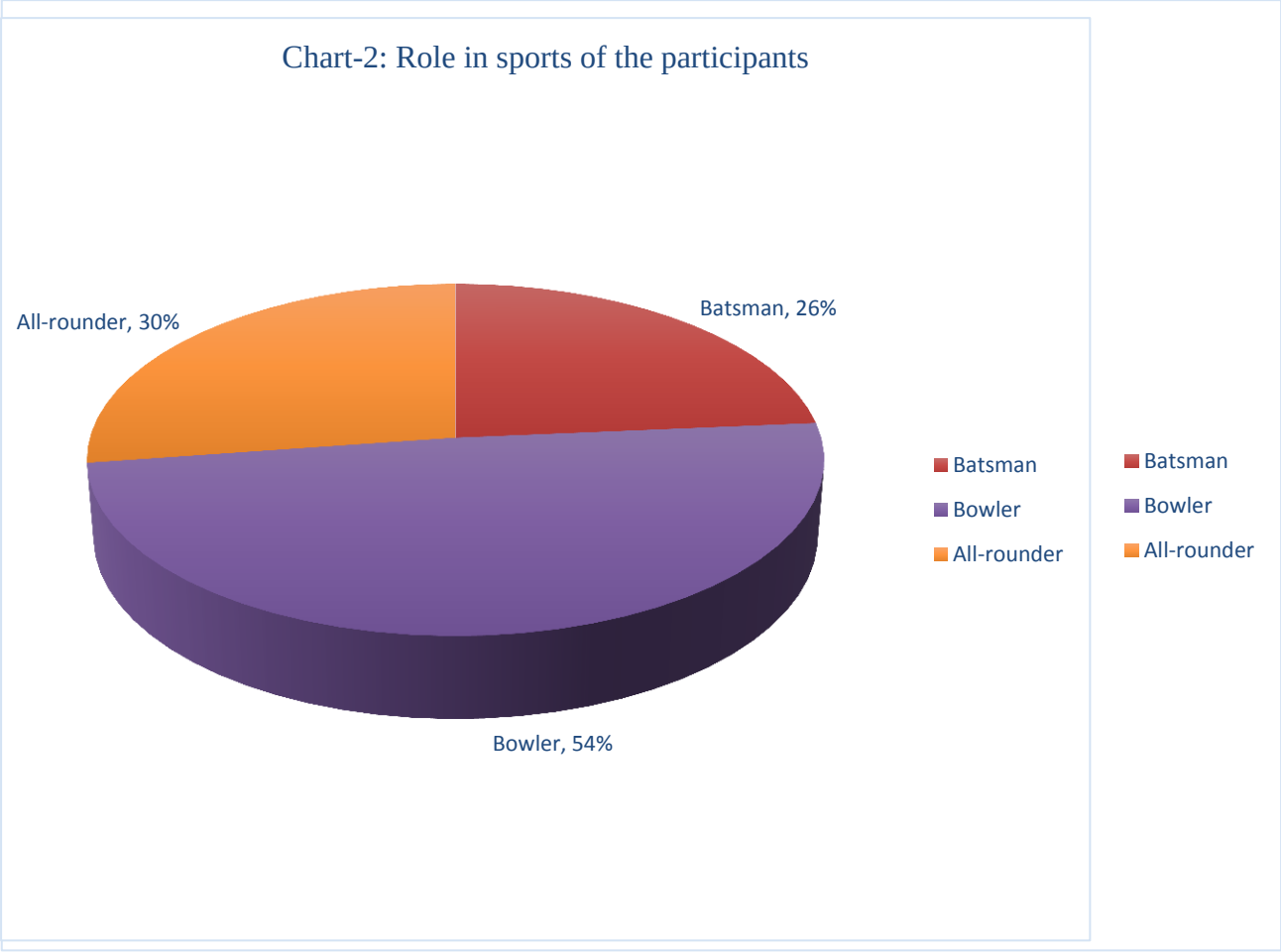
Sex of the participants

Among 50 participants 30 cricketers are male and 20 cricketers are female.



Type of role in sports of the participants

Analysis showed that bowlers are mostly affected by the injuries in cricket. Among the 50 cricketers 13 (26.0%) were batsman, 27 (54.0%) were bowler, 10 (20.0%) were all-rounder (both bowling and batting).

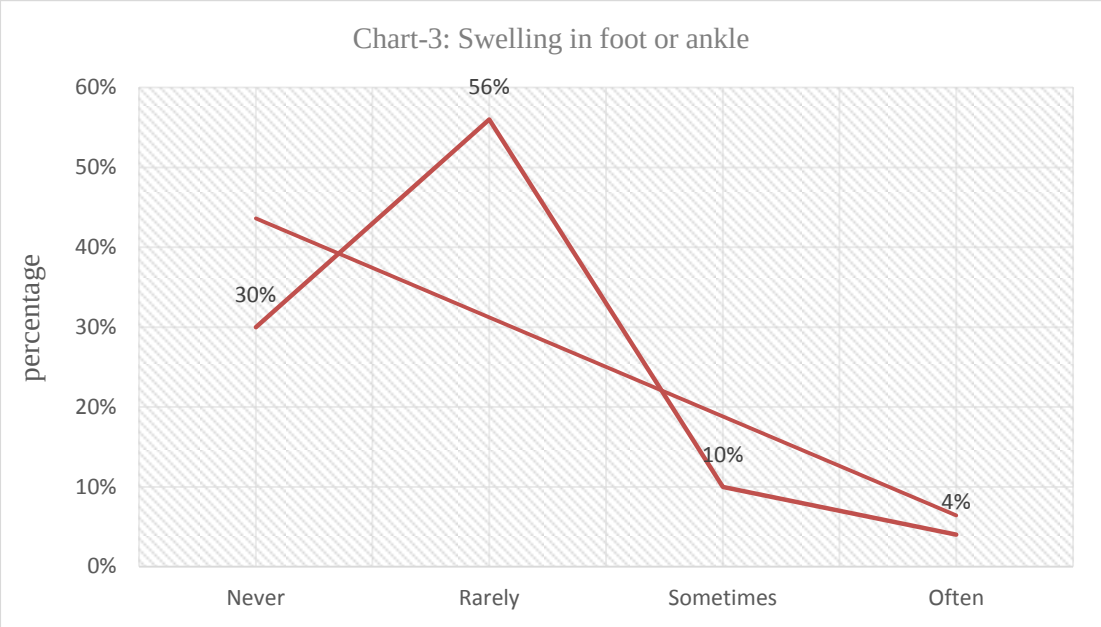


Clinical features

To find out the clinical features there was some questions.

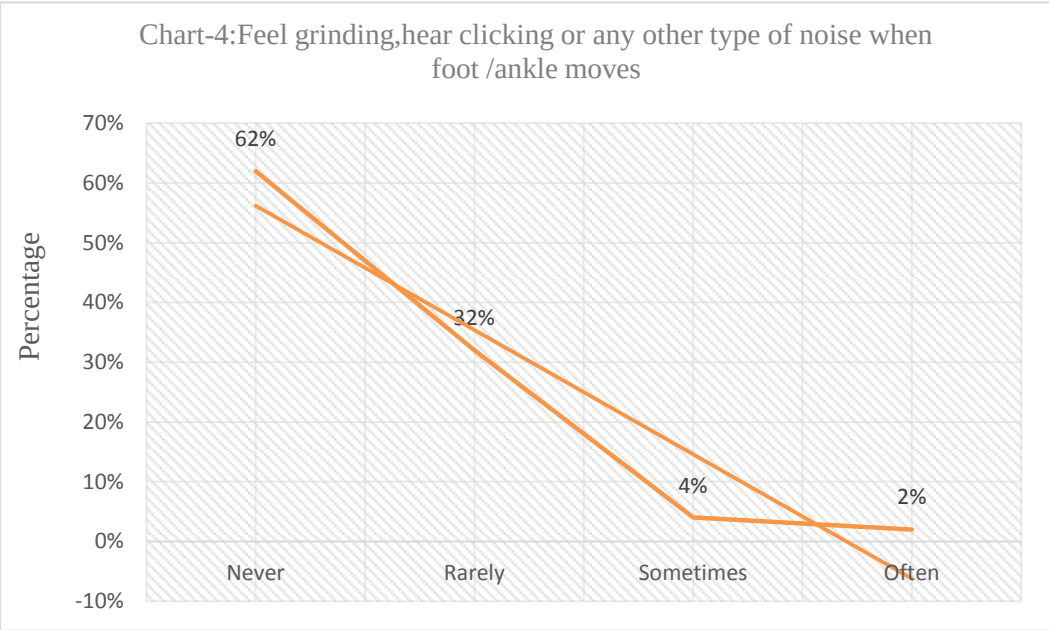
Do you have swelling in your foot /ankle?

Analysis showed that among 50 cricketers 15 (30.0%) never, 28 (56.0%) rarely, 5 (10.0%) sometimes, 2 (4.0%) often had swelling in their foot /ankle.



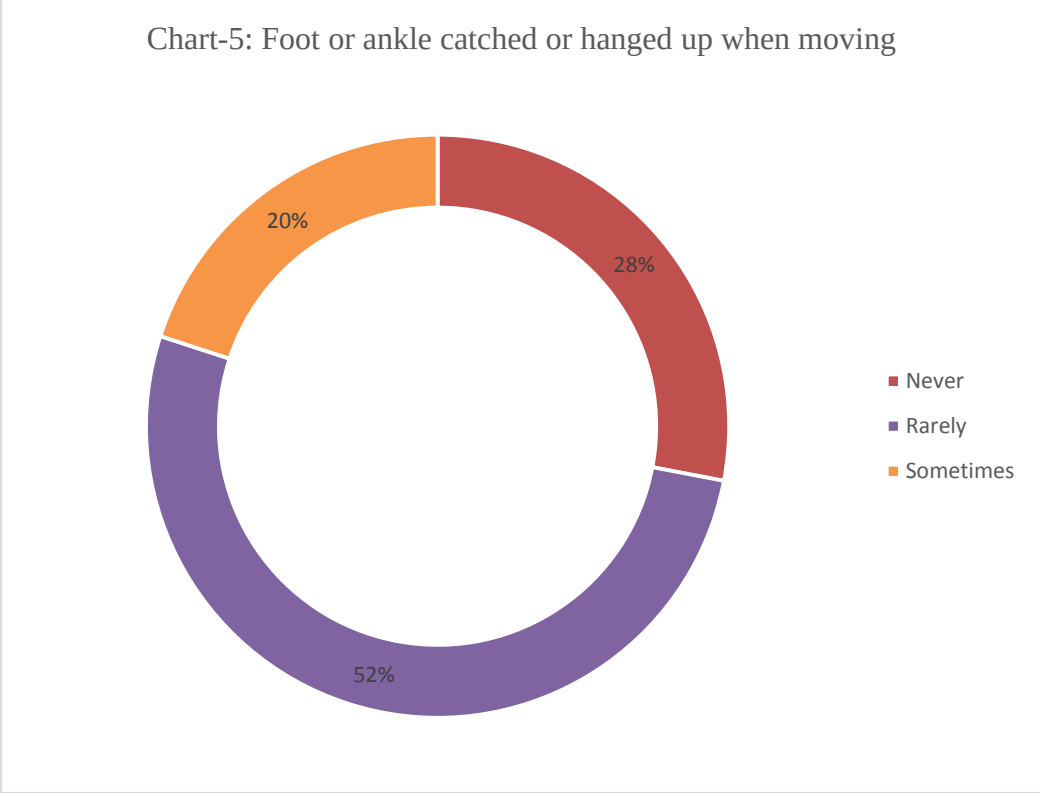
Do you feel grinding, hear clicking or any other type of noise when your foot / ankle moves?

Among 50 participant 31(62.0%) never, 16 (32.0%) rarely, 2 (4.0%) sometimes and 1 (2.0%) often felt grinding, heard clicking or any other type of noise when their foot / ankle moved.



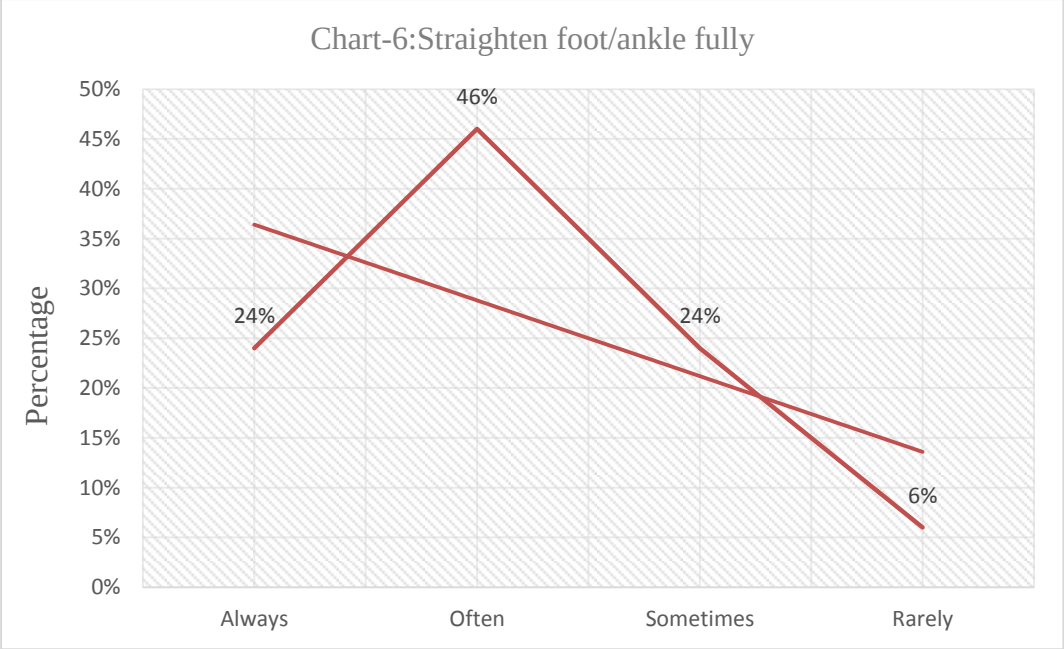
Does foot /ankle catch or hang up when moving?

Among 50 cricketers 14(28.0%) never, 26 (52.0%) rarely, 10 (20.0%) sometimes their foot /ankle catched or hanged up when moving.



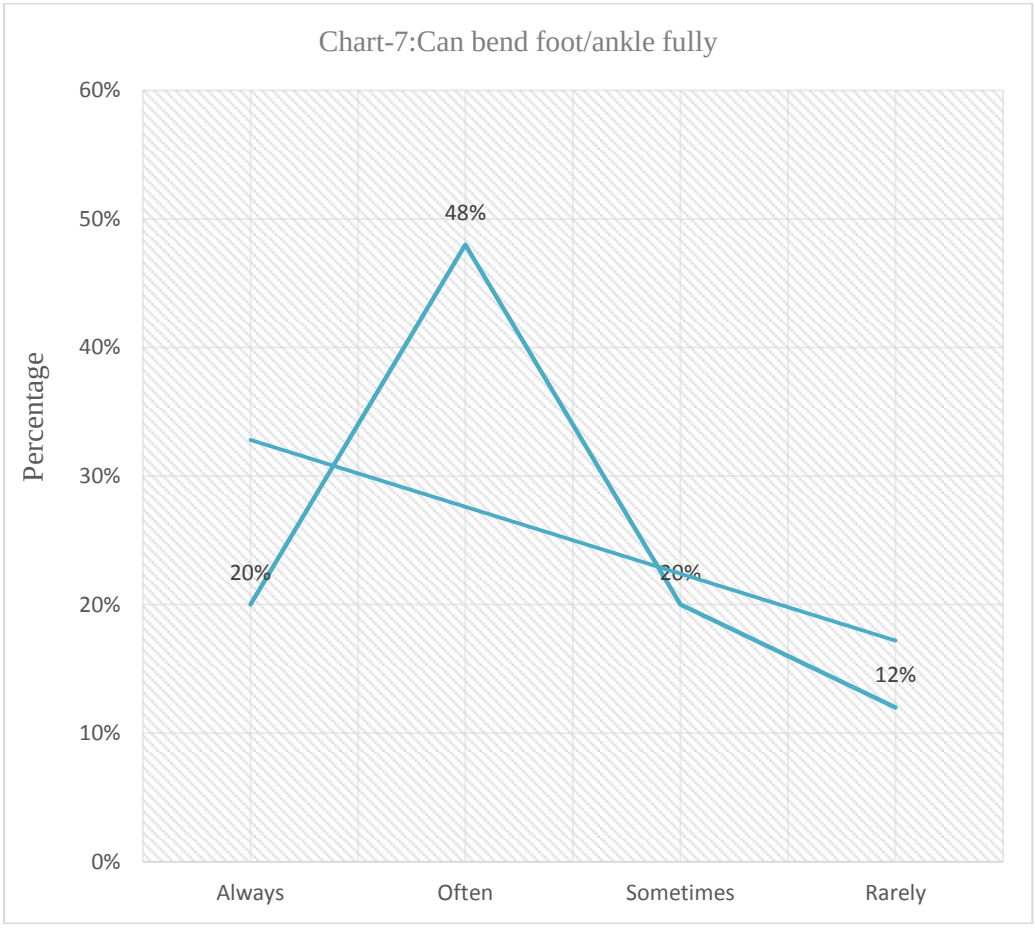
Can you straighten your foot/ ankle fully?

Among 50 cricketers 12(24.0%) always, 23 (46.0%) rarely, 12 (24.0%) sometimes , 3 (6.0%) rarely can straighten their foot/ ankle fully .



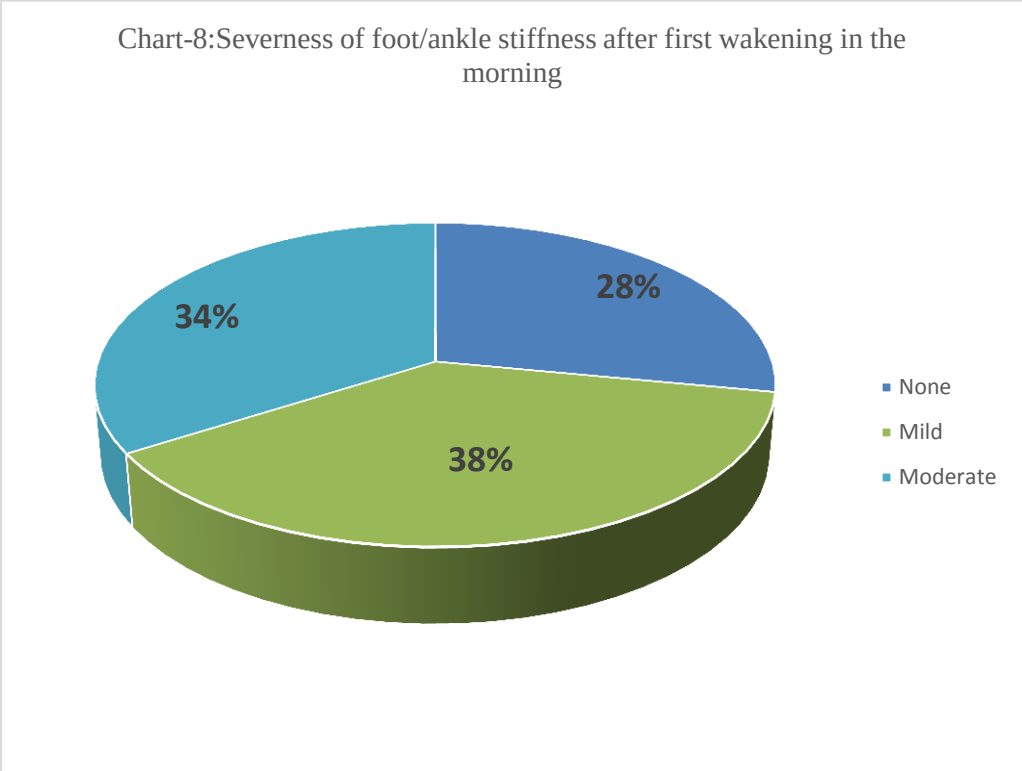
Can you bend your foot/ ankle fully?

Among 50 cricketers 10(20.0%) always, 24(48.0%) often, 10 (20.0%) sometimes and 6 (12%) rarely could bend their foot/ ankle fully.



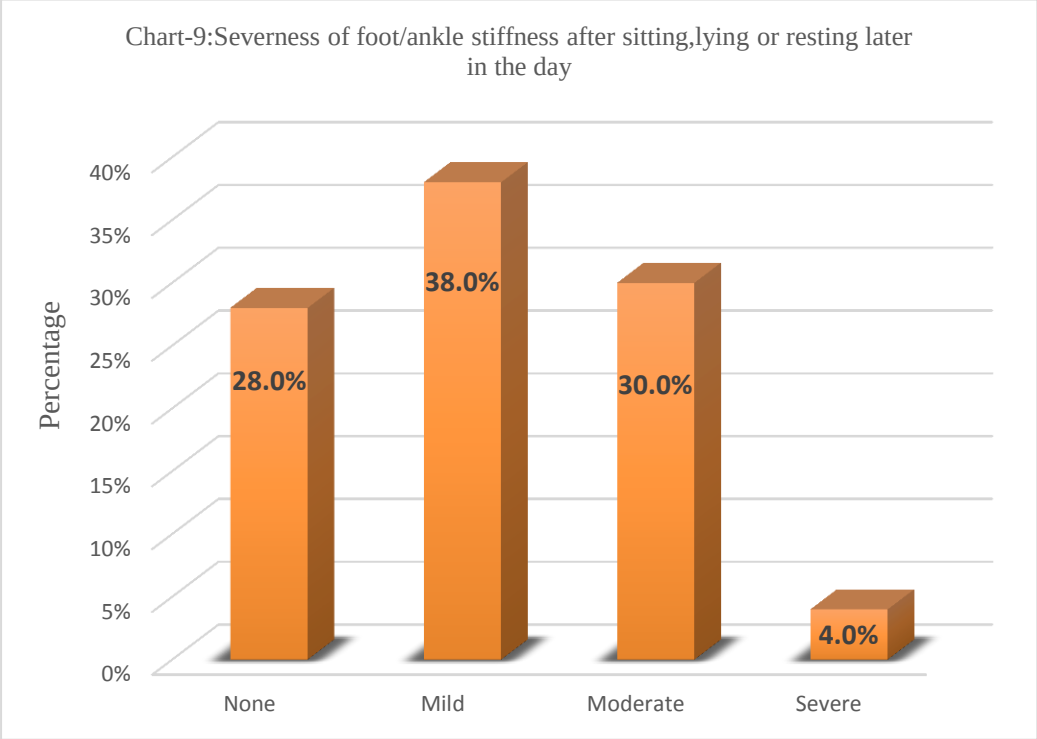
How severe is your foot/ankle stiffness after first wakening in the morning?

Analysis showed that among 50 participant's foot/ankle stiffness after first wakening in the morning was 14(28%) none, 19 (38.0%) mild, 17(34.0%) moderate.



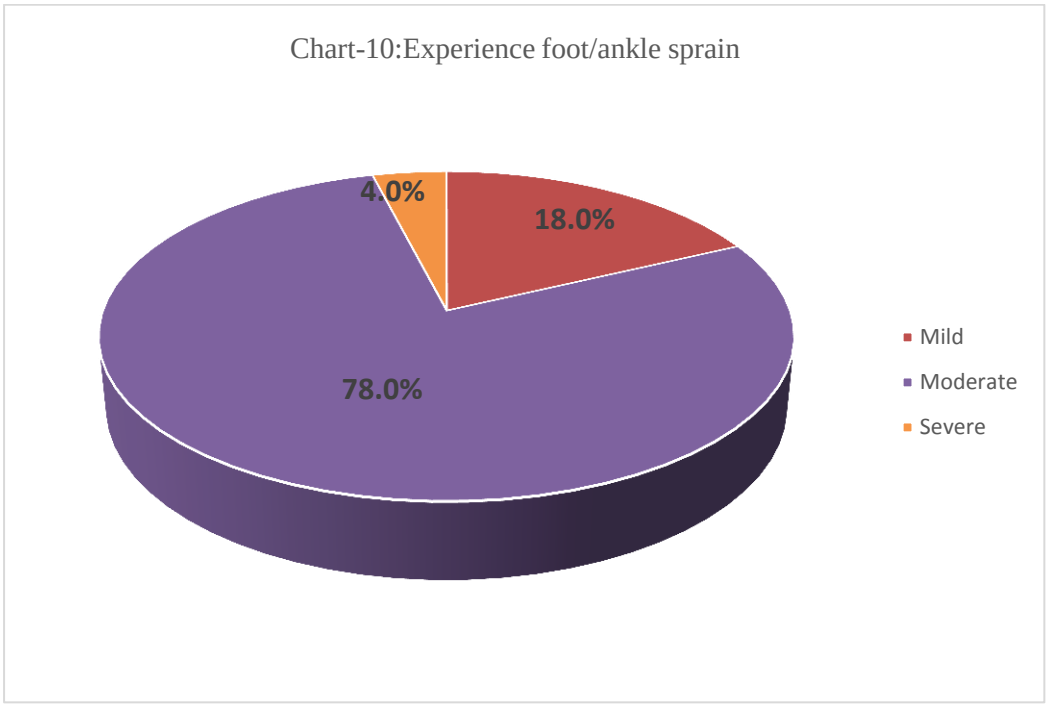
How severe is your foot/ankle stiffness after sitting, lying or resting later in the day?

Analysis showed that among 50 participant's foot/ankle stiffness after sitting , lying or resting later in the day was 14(28%) none , 19 (38.0%) mild , 15 (30.0%) moderate and 2 (4.0%) severe.



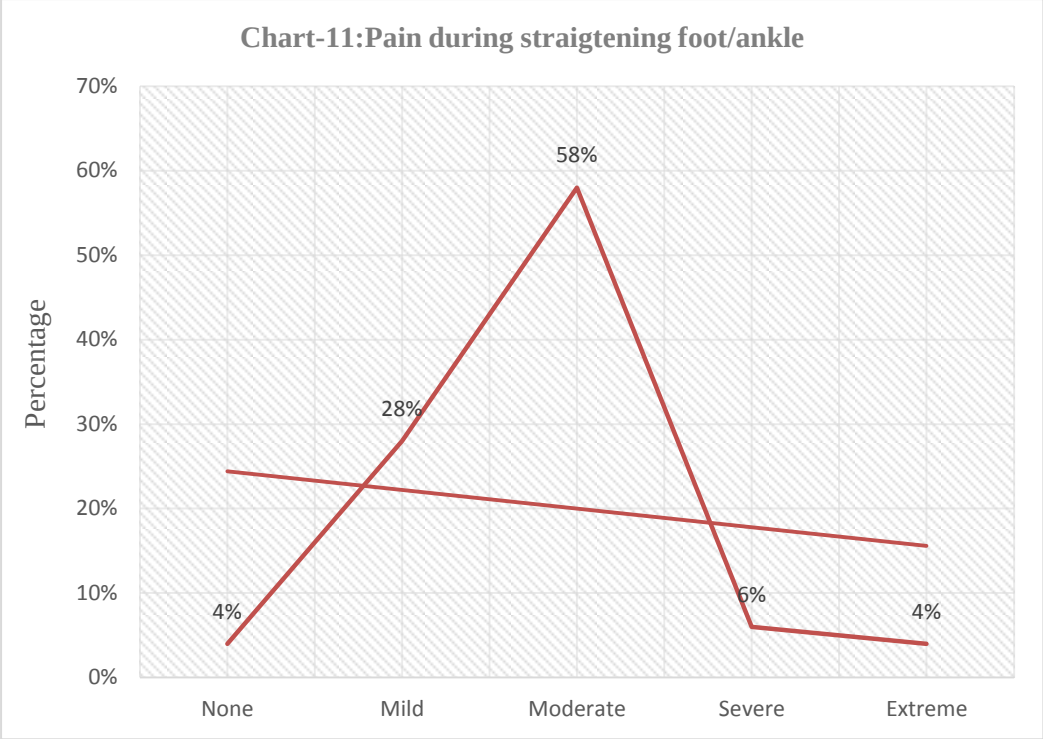
How often do you experience foot /ankle sprain?

Among 50 participant 9 (18.0%) mild, 39 (78.0%) moderate, 2 (4.0%) severe experienced foot / ankle sprain.



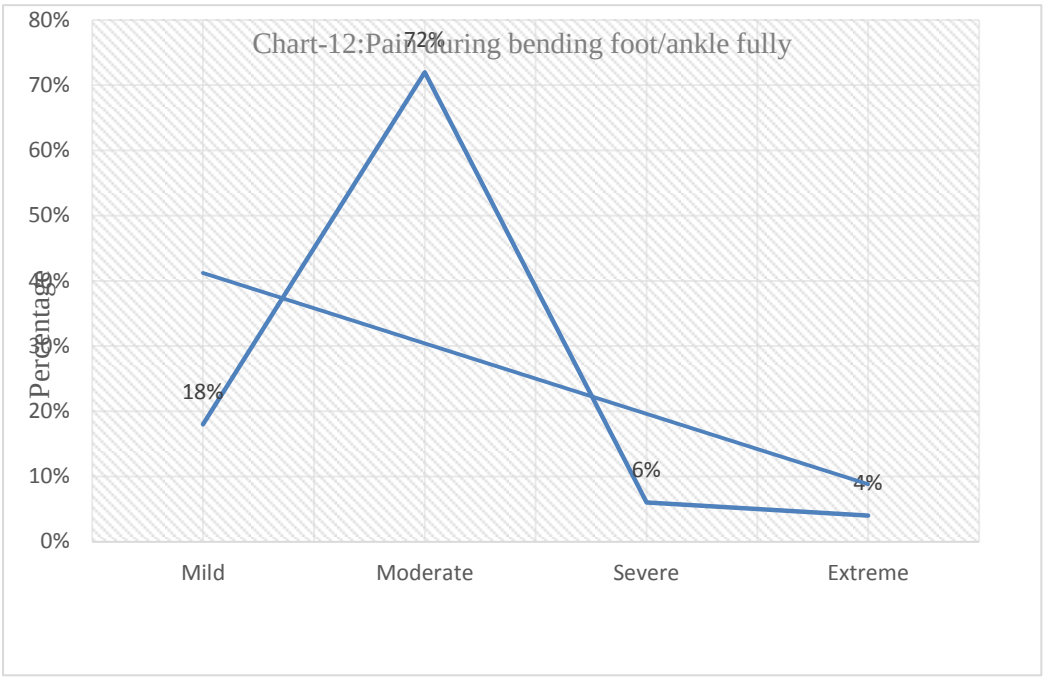
Pain during straightening foot/ankle fully

Among 50 cricketers 2 (4.0%) none, 14 (28.0%) mild, 29 (58.0%) moderate, 3 (6.0%) severe, 2 (4.0%) extreme pain during straightening foot/ankle fully.



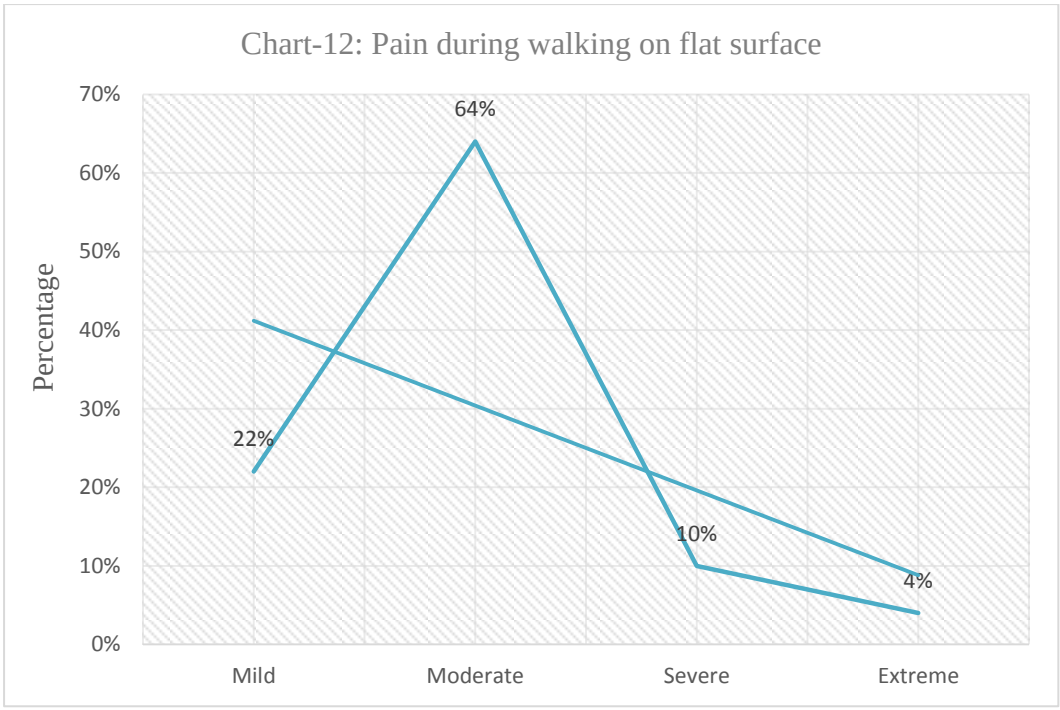
Pain during bending foot/ ankle fully

Among 50 cricketers 9 (18.0%) mild, 36 (72.0%) moderate, 3 (6.0%) severe, 2(4.0%) extreme pain during bending foot/ ankle fully.



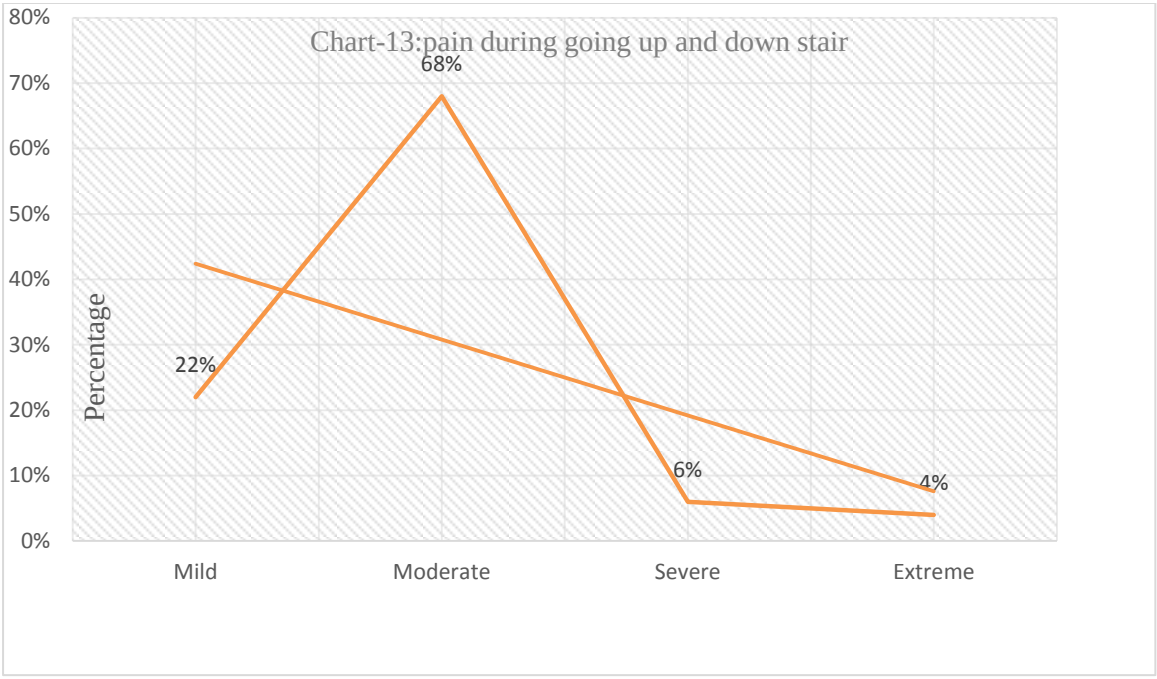
Pain during walking on flat surface

Among 50 cricketers 11 (22.0%) mild, 32 (64.0%) moderate, 5 (10.0%) severe, 2 (4.0%) extreme pain during walking on flat surface.



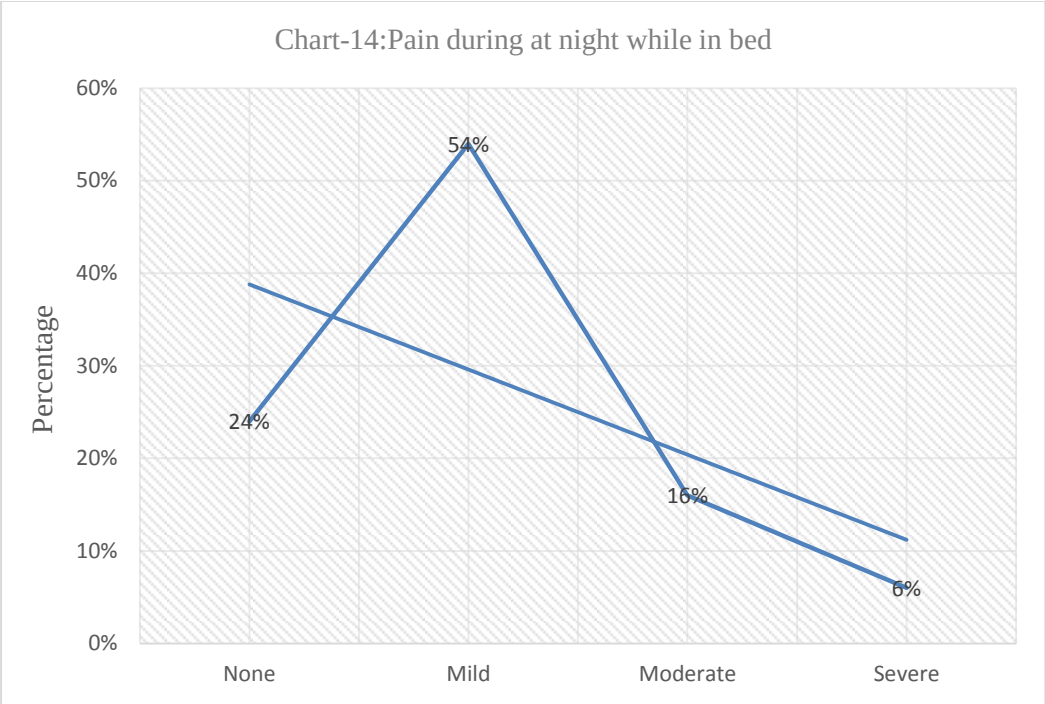
Pain during going up or down stairs

Among 50 cricketers 11 (22.0%) mild, 34(68.0%) moderate, 3 (6.0%) severe, 2 (4.0%) extreme pain during going up or down stairs.



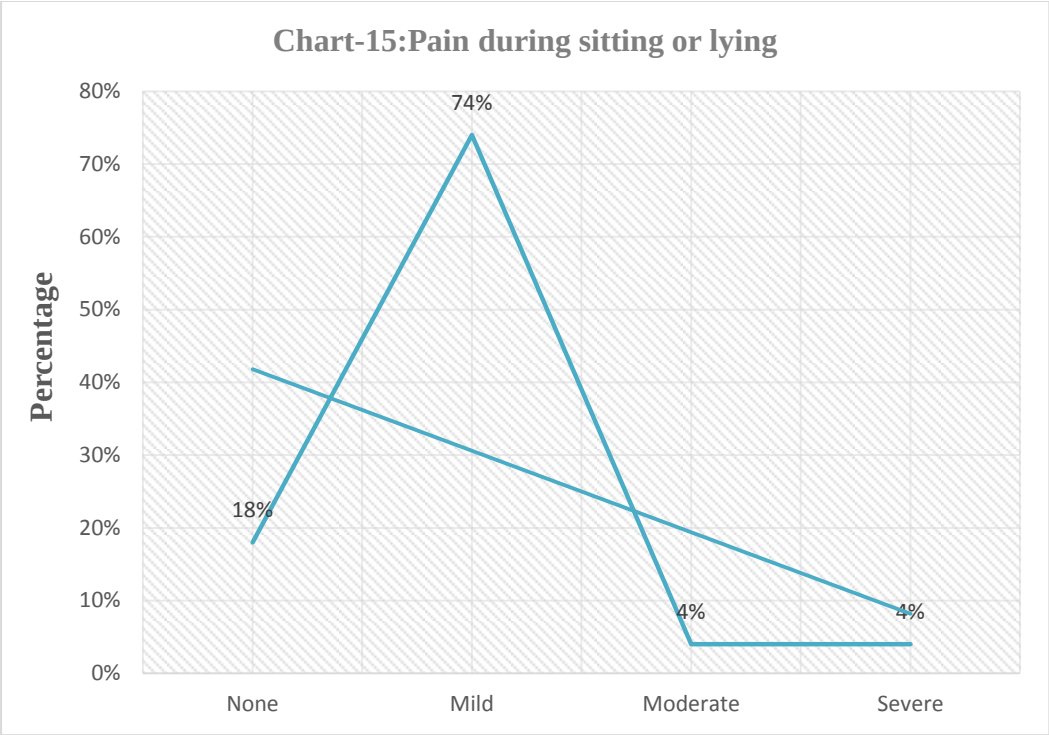
Pain during at night while in bed

Among 50 cricketers 12 (24.0%) none, 27(54.0%) mild, 8(16.0%) moderate, 3 (6.0%) severe pain during at night while in bed.



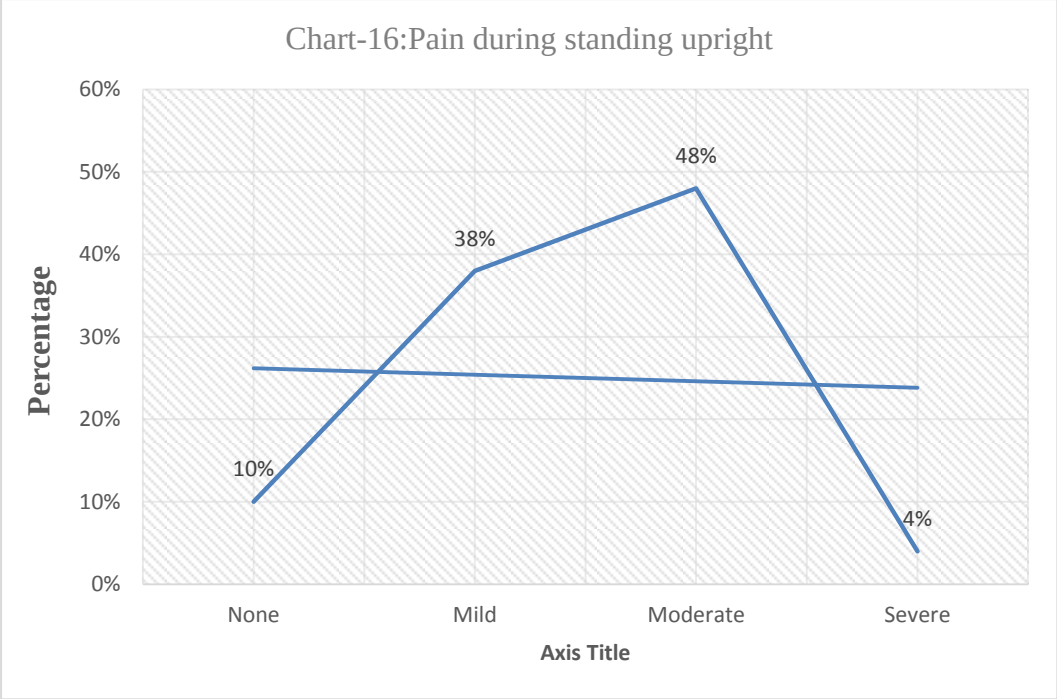
Pain during sitting or lying

Among 50 cricketers 9 (18.0%) none, 37(74.0%) mild, 2(4.0%) moderate, 2 (4.0%) severe Pain during sitting or lying.



Pain during standing upright

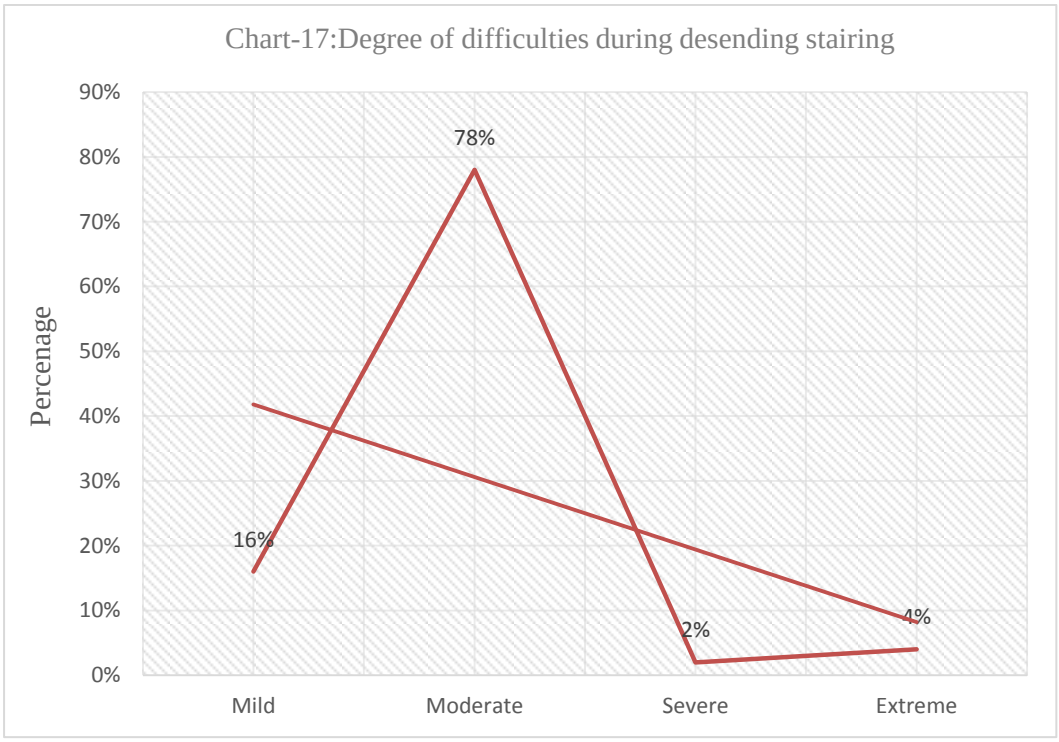
Among 50 cricketers 5(10.0%) none, 19(38.0%) mild, 24(48.0%) moderate, 2 (4.0%) severe pain during standing upright.



Function, activities of daily living (ADL)

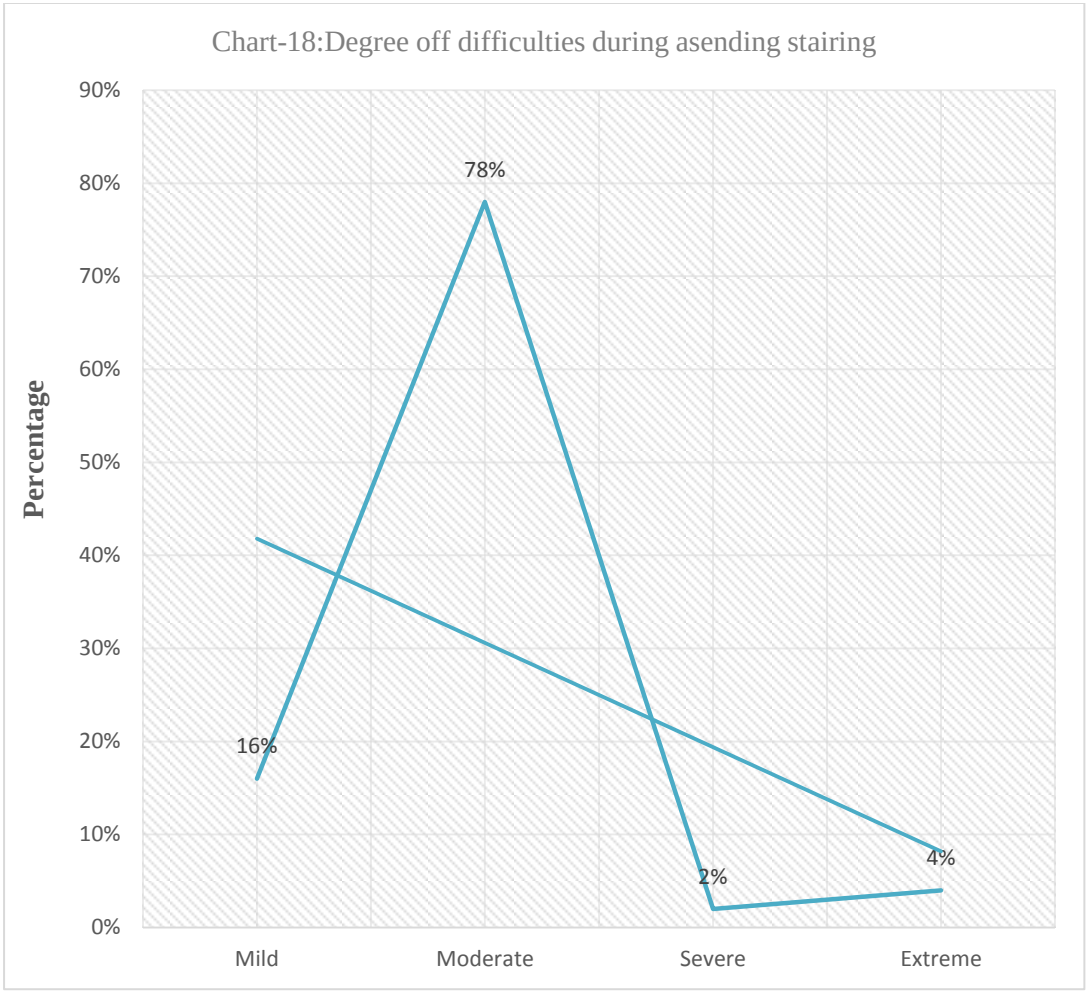
Degree of difficulty during descending stairs

Among 50 cricketers 8(16.0%) mild, 39(78.0%) moderate, 1 (2.0%) severe and 2 (4.0%) extreme difficulty during descending stairs.



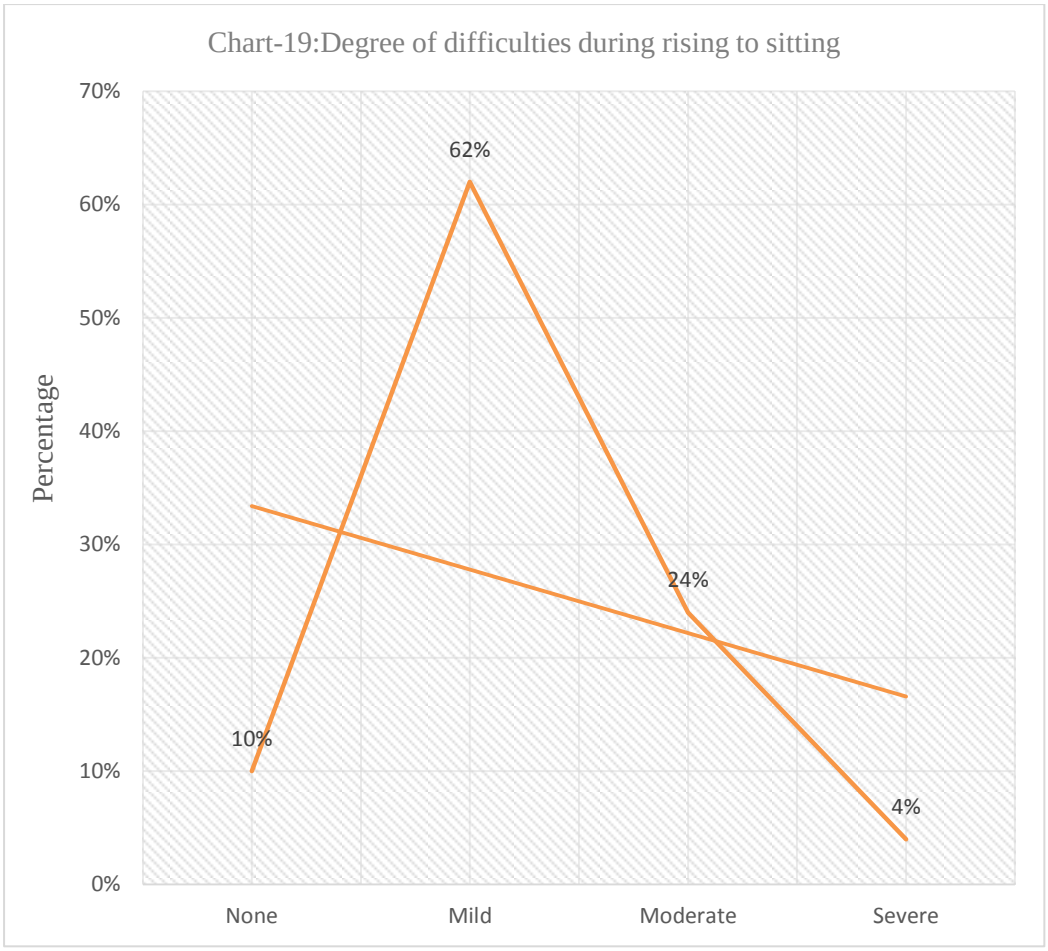
Degree of difficulty during ascending stairs

Among 50 cricketers 8(16.0%) mild, 39(78.0%) moderate, 1 (2.0%) severe and 2 (4.0%) extreme difficulty during ascending stairs.



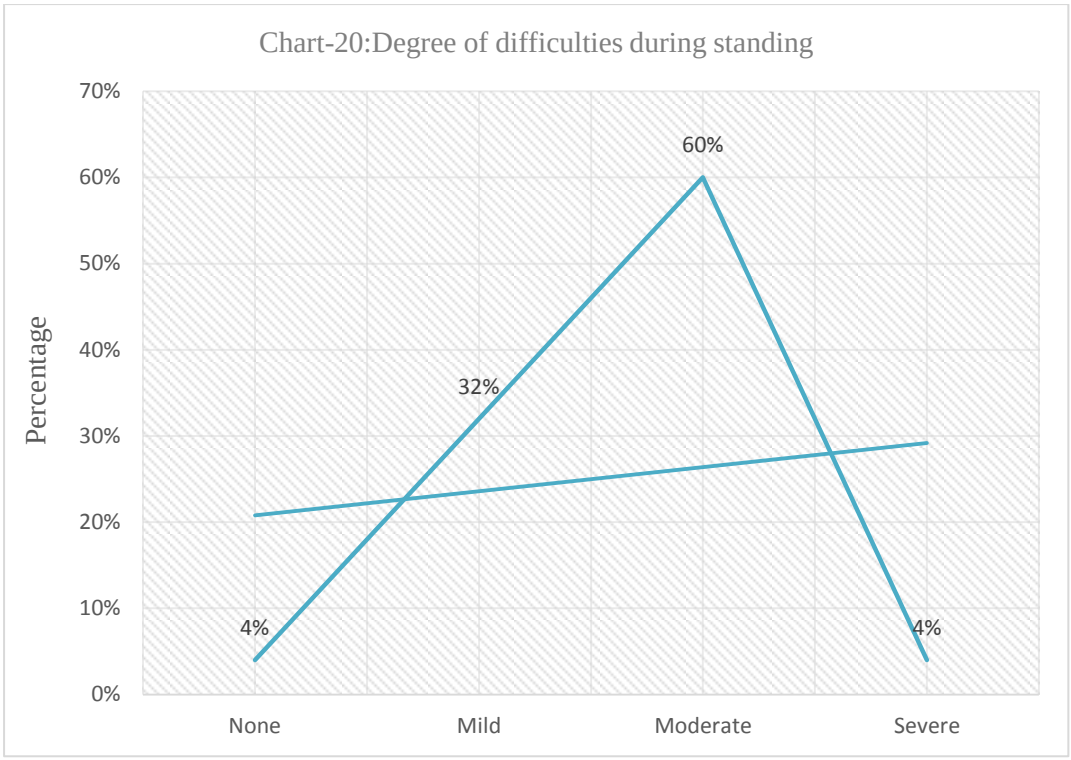
Degree of difficulty during rising from sitting

Among 50 cricketers 5(10.0%) none, 31(62.0%) mild, 12(24.0%) moderate, and 2 (4.0%) severe difficulty during rising from sitting.



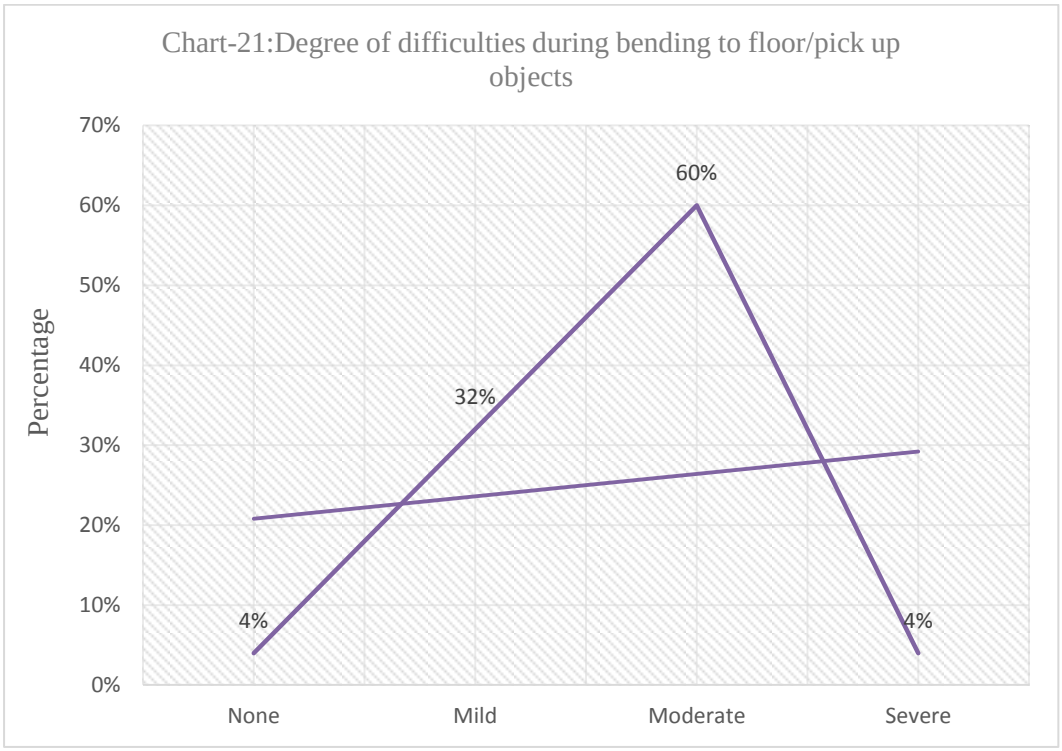
Degree of difficulty during standing

Among 50 cricketers 2(4.0%) none, 16(32.0%) mild, 30(60.0%) moderate, 2(4.0%) severe difficulty during standing.



Degree of difficulty during bending to floor/ pick up an object

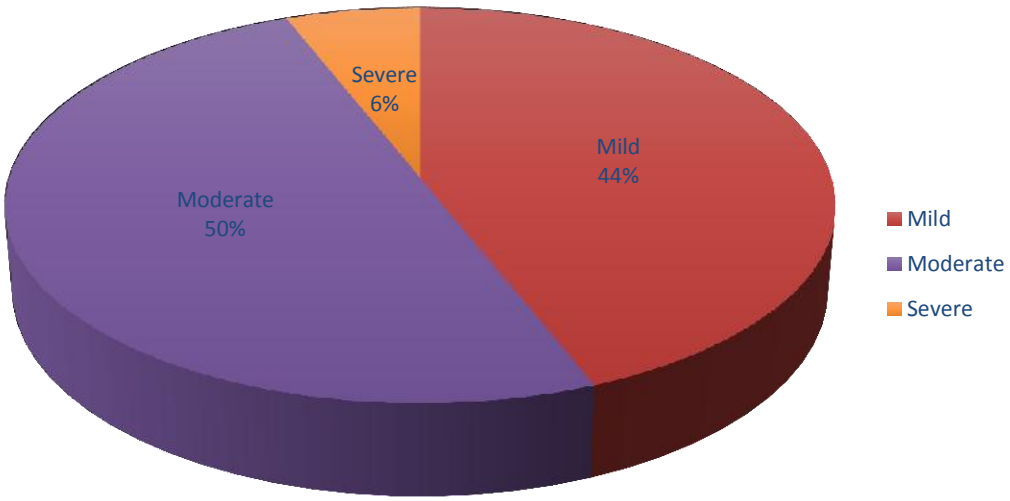
Among 50 cricketers 2 (4.0%) none 16(32.0%) mild, 30(60.0%) moderate, 2(4.0%) severe difficulty during bending to floor/ pick up an object.



Degree of difficulty during walking on flat surface

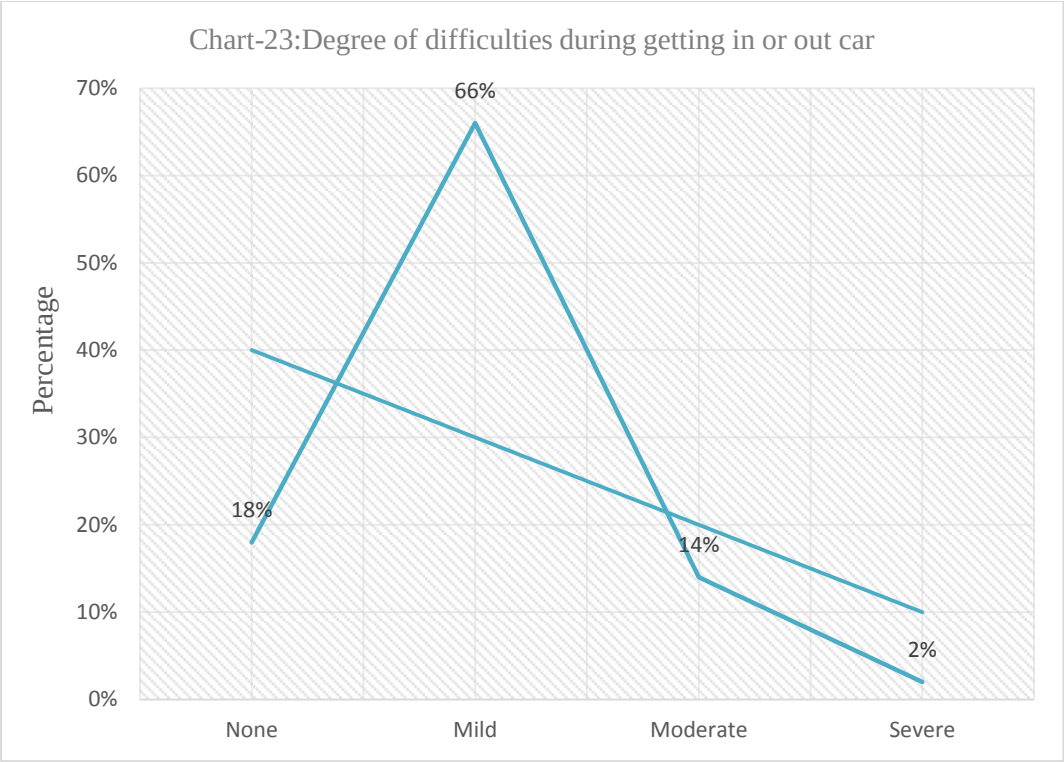
Among 50 cricketers 25(50.0%) mild, 22(44.0%) moderate, 3(6.0%) severe difficulty during walking on flat surface.

Chart-22:Degree of difficulties during walking on flat surface



Degree of difficulty during getting in /out of car

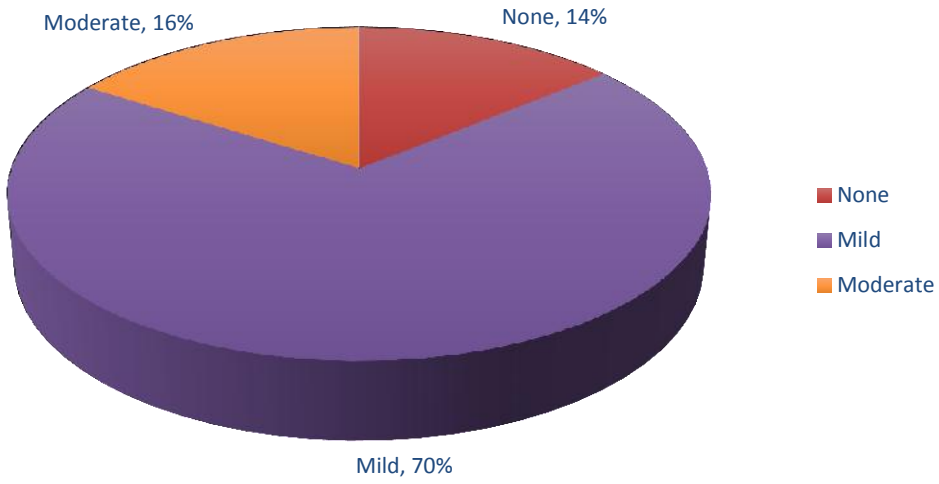
Among 50 cricketers 9(18.0%) none, n=33(66.0%) mild, 7(14.0%) moderate, 1 (2.0%) severe difficulty during getting in /out of car.



Degree of difficulty during putting on socks / stockings

Among 50 cricketers 7(14.0%) none, 35(70.0%) mild, 8(16.0%) moderate difficulty during putting on socks / stockings.

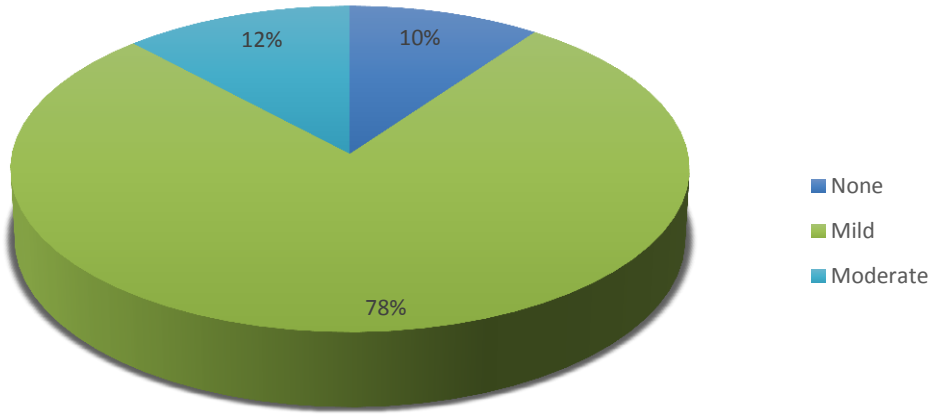
Chart-24:Degree of difficulties during putting on sock/socking



Degree of difficulty during rising from bed

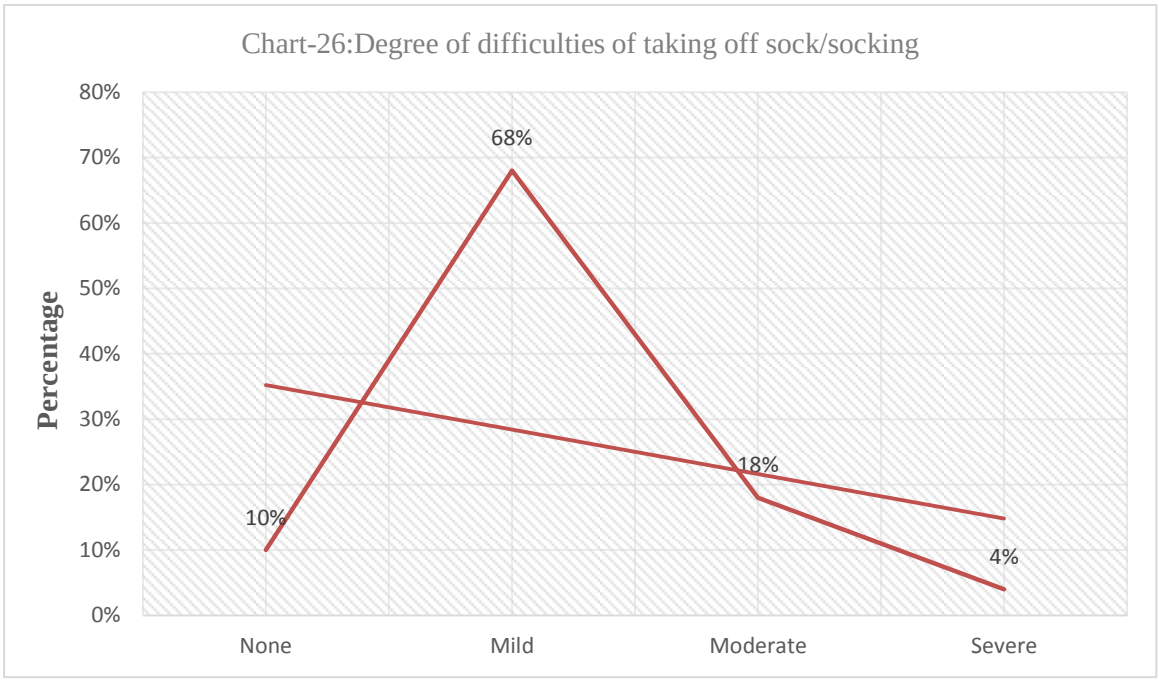
Among 50 cricketers 5(10.0%) none, 39(78.0%) mild, 6(12.0%) moderate difficulty during rising from bed.

Chart-25:Degree of difficulties during rising from bed



Degree of difficulty during taking off socks/ stockings

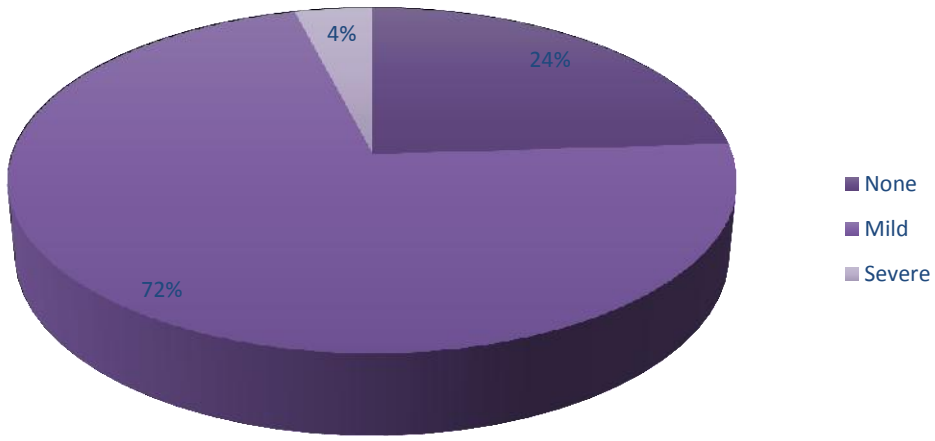
Among 50 cricketers 5(10.0%) none 34(68.0%) mild, 9(18.0%) moderate 2 (4.0%) severe difficulty during taking off socks/ stockings.



Degree of difficulty during lying on bed (turning over, maintaining foot /ankle position)

Among 50 cricketers 12(24.0%) none, 36(72.0%) mild and 2 (4.0%) severe difficulty during lying on bed (turning over, maintaining foot /ankle position).

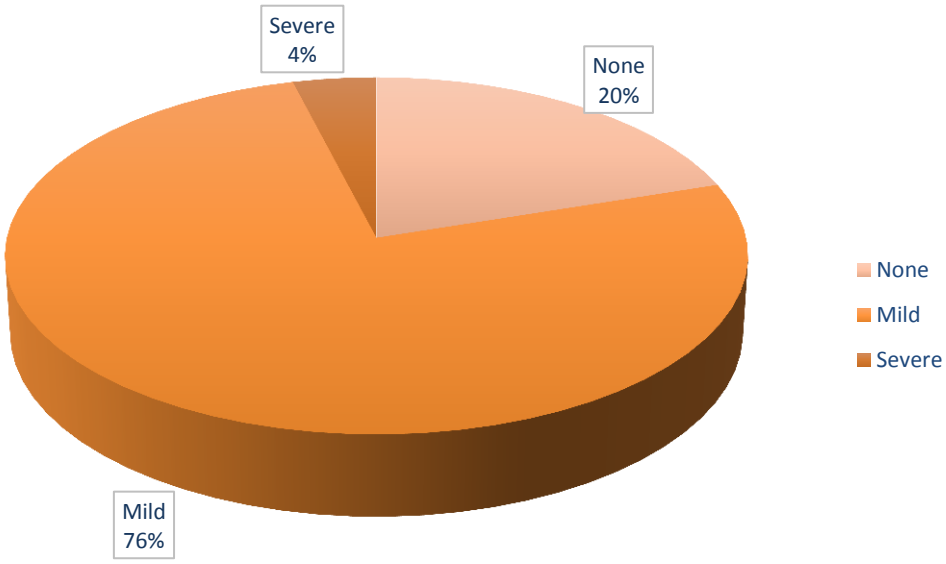
Chart-28:Degree of difficulties during lying on bed



Degree of difficulty during getting in/out of bath

Among 50 cricketers 10(20.0%) none, 38(76.0%) mild and 2 (4.0%) severe difficulty during getting in/out of bath.

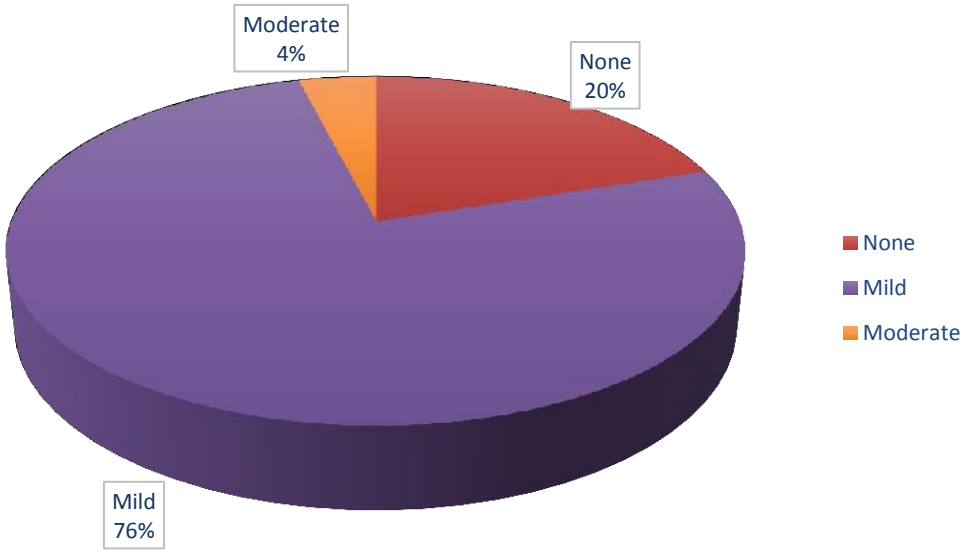
Chart-29:Degree of difficulties during getting in/out bath



Degree of difficulty during sitting

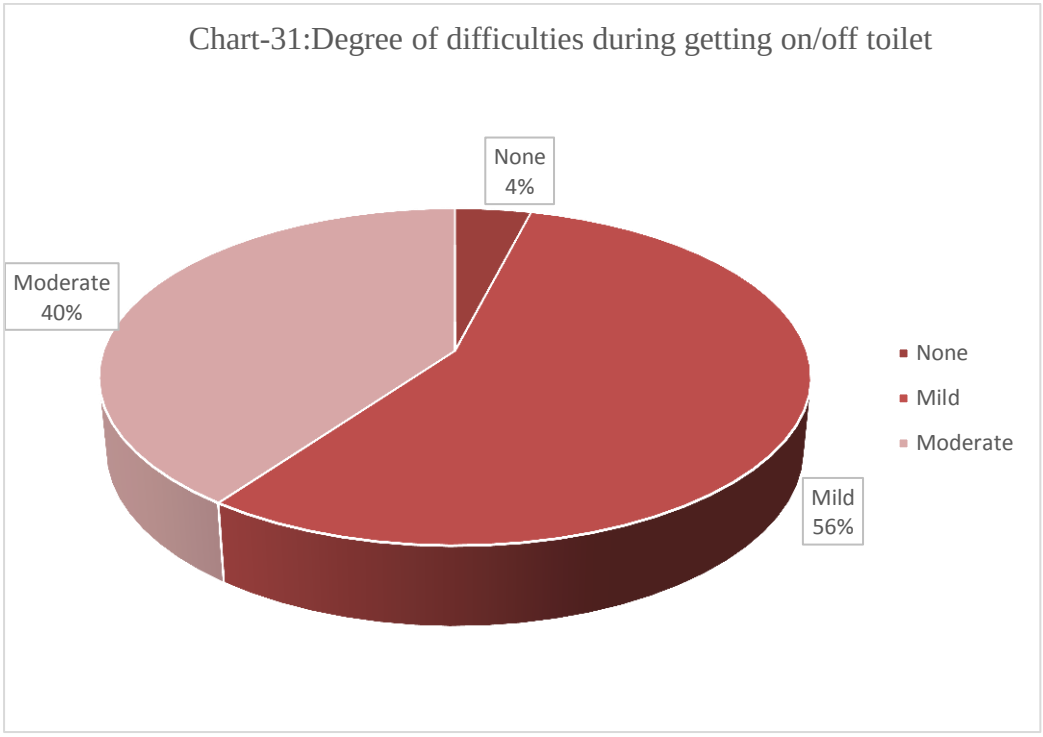
Among 50 cricketers 10(20.0%) none 34(68.0%) mild, 6(12.0%) moderate difficulty during sitting.

Chart-30:Degree of difficulties during sitting



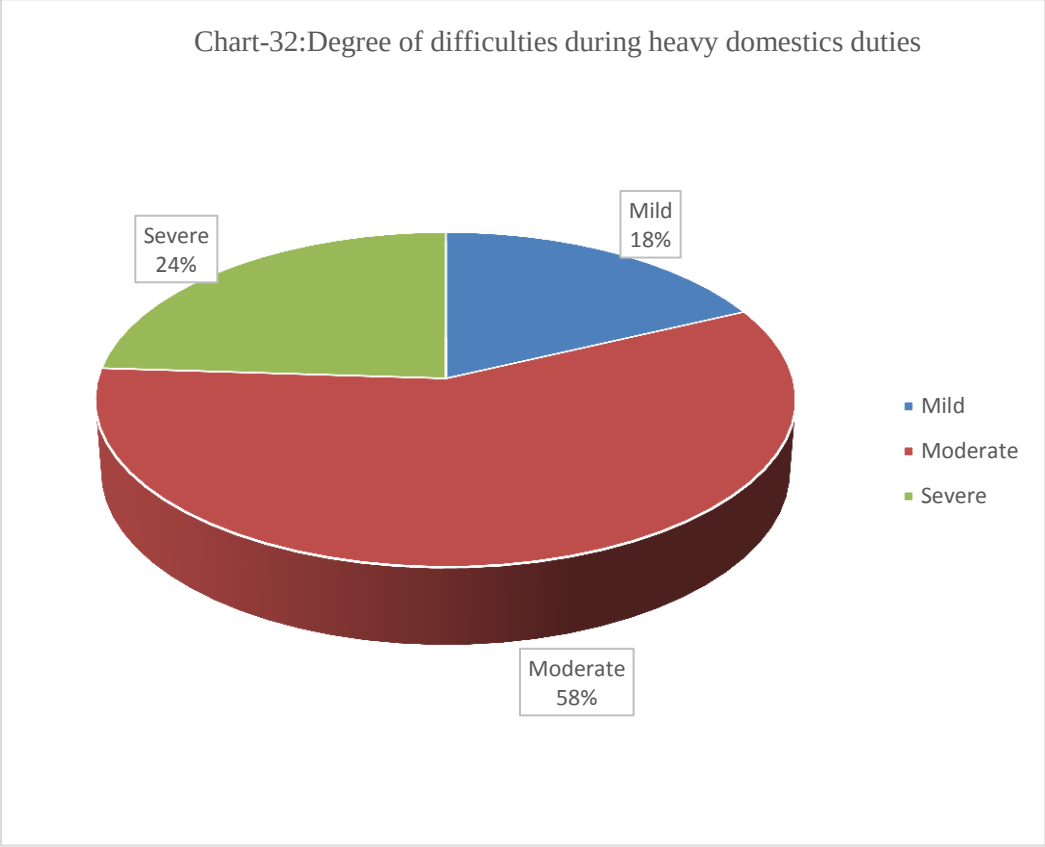
Degree of difficulty during getting on/ off toilet

Among 50 cricketers 2 (4.0%) none, 28(56.0%) mild, 20(40.0%) moderate difficulty during getting on/ off toilet.



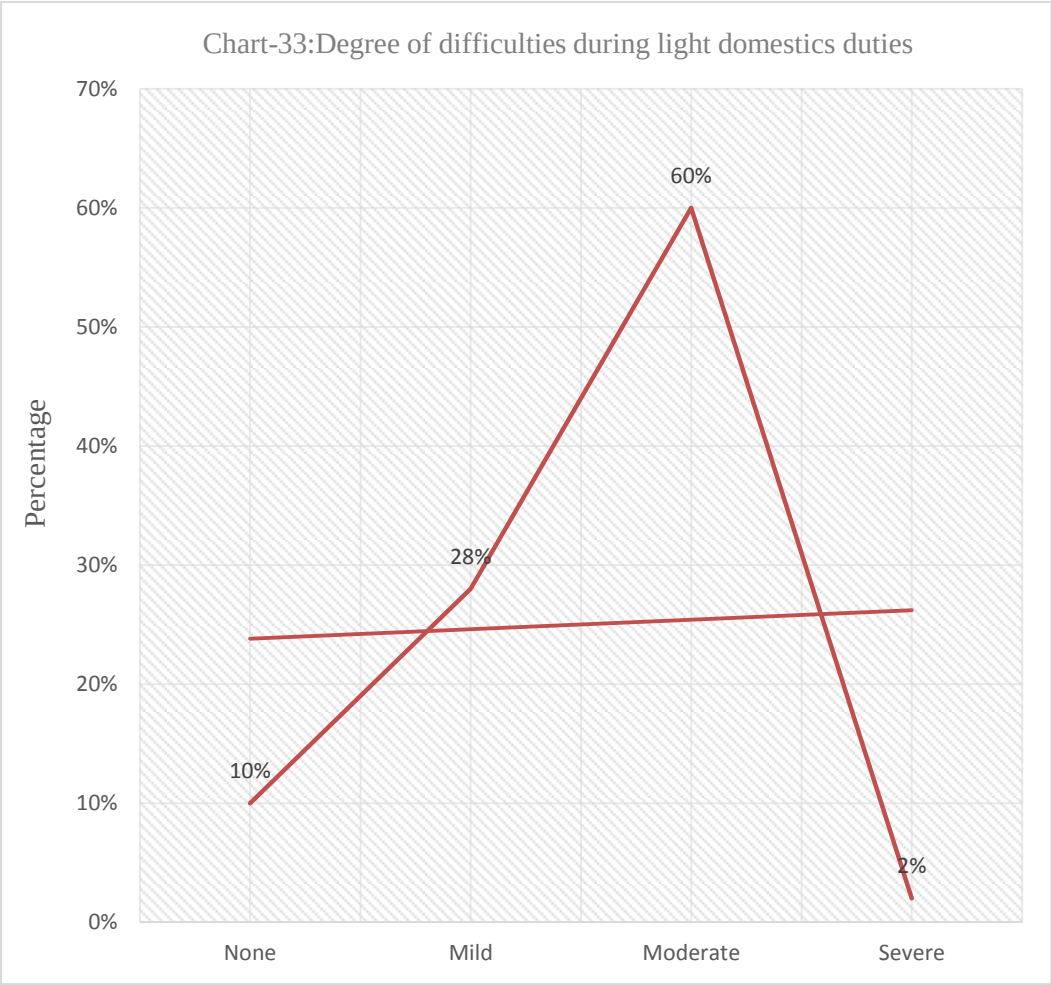
Degree of difficulty during heavy domestic duties (moving heavy boxes, scrubbing floors, etc.)

Among 50 cricketers 9(18.0%) mild, 29(58.0%) moderate, 12 (24.0%) severe difficulty during heavy domestic duties (moving heavy boxes, scrubbing floors, etc.).



Degree of difficulty during light domestic duties (cooking, dusting, etc.)

Among 50 cricketers 5(10.0%) none, 14(28.0%) mild, n= 30(60.0%) moderate, n=1 (2.0%) severe difficulty during light domestic duties (cooking, dusting, etc.).

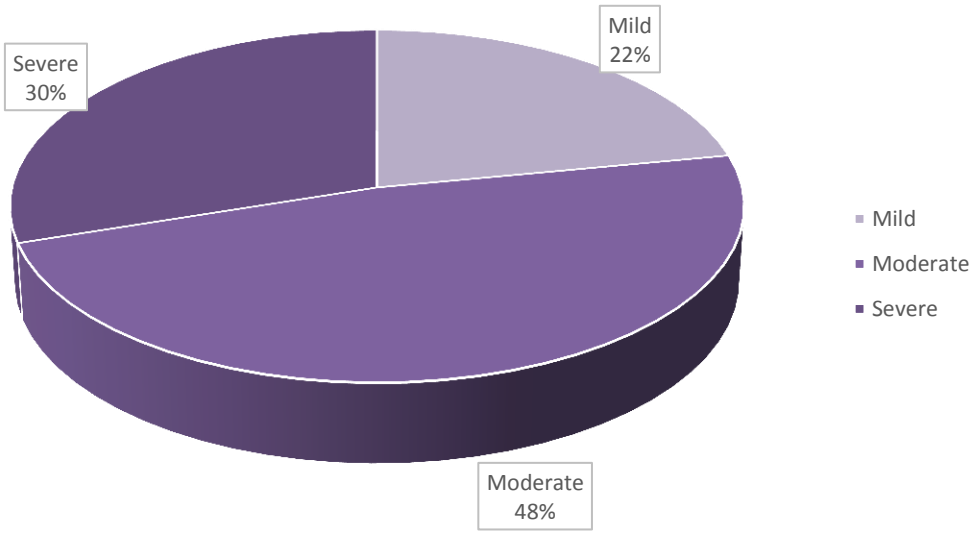


Function, sports and recreational activities

Degree of difficulty during squatting

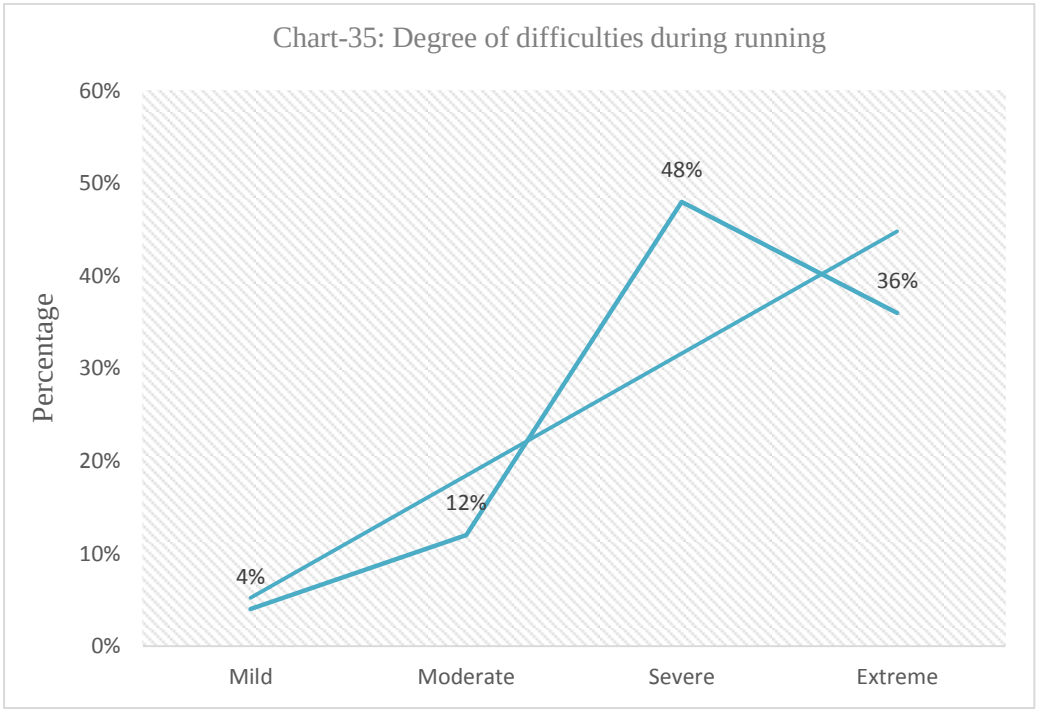
Among 50 cricketers 11(22.0%) mild, 24(48.0%) moderate, 15 (30.0%) severe difficulty during squatting.

Chart-34:Degree of difficulties during squatting



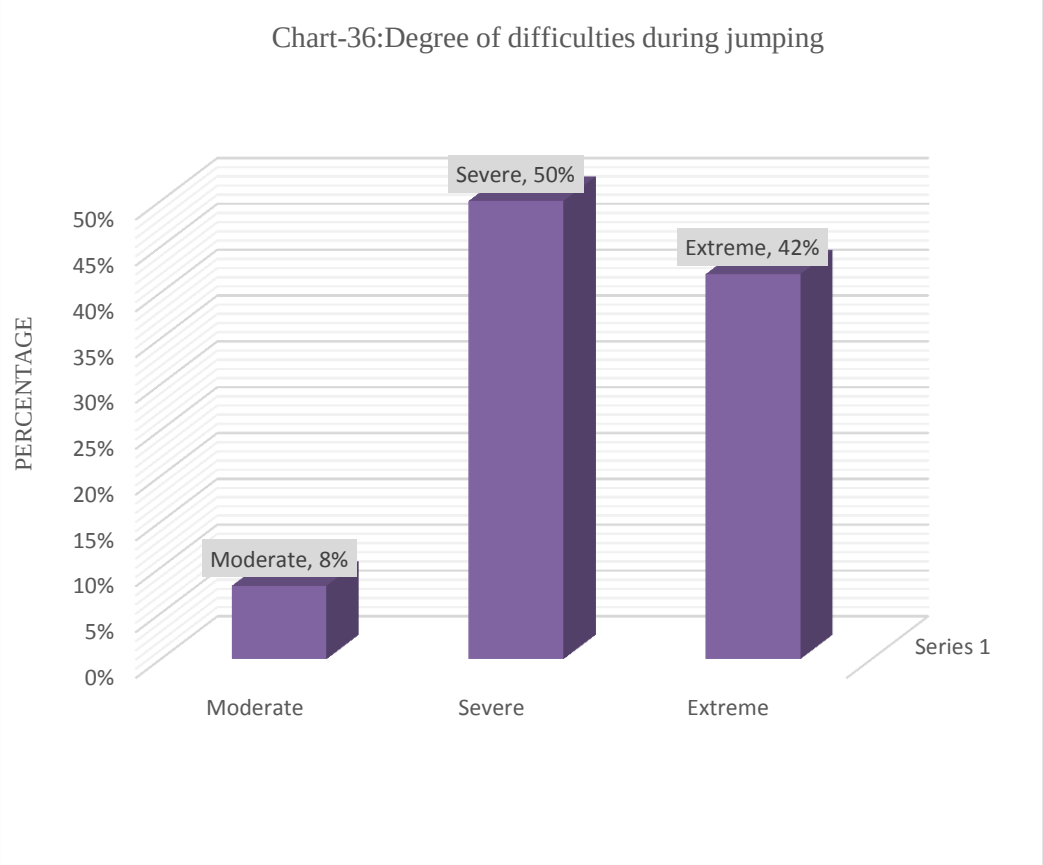
Degree of difficulty during running

Among 50 cricketers 2(4.0%) mild, 6(12.0%) moderate, 24 (48.0%) severe and 18 (36.0%) extreme difficulty during running.



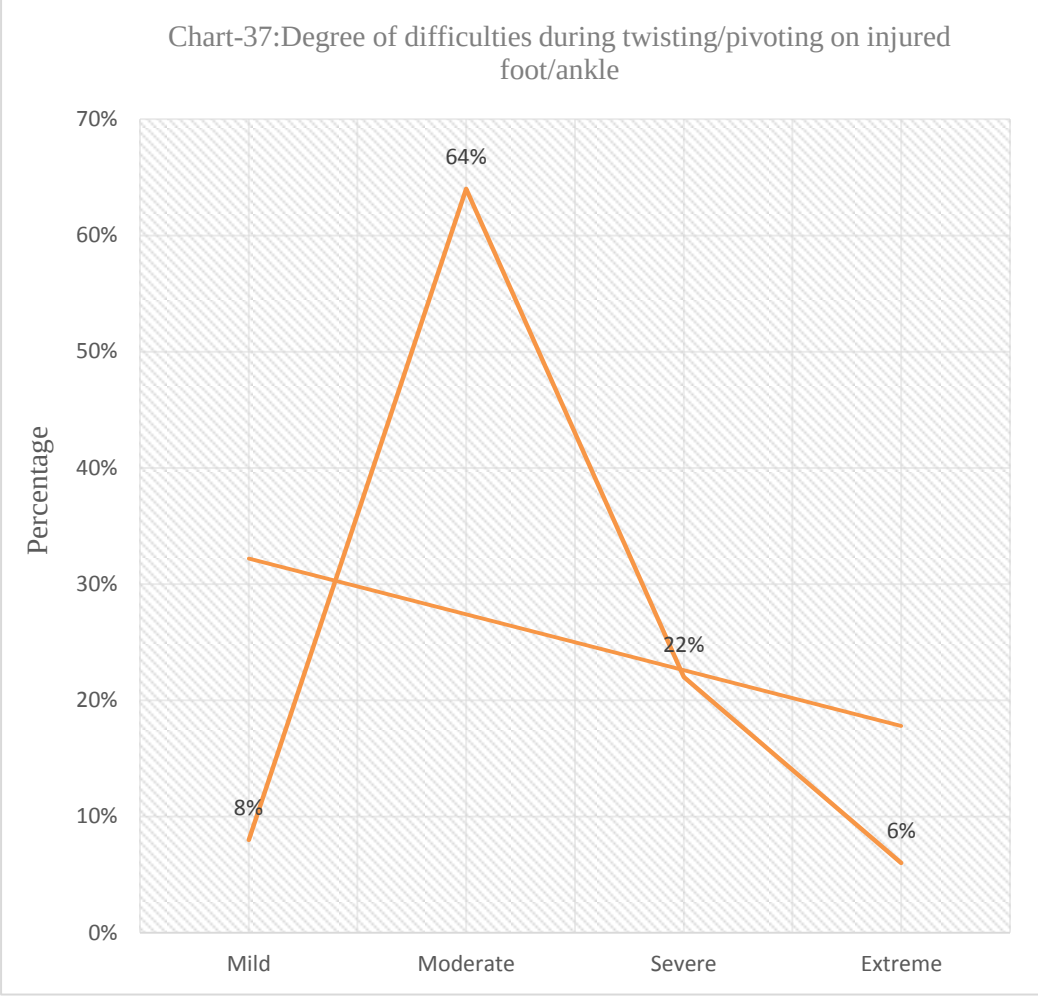
Degree of difficulty during jumping

Among 50 cricketers 4(8.0%) moderate, 25 (50.0%) severe and 21 (42.0%) extreme difficulty during jumping.



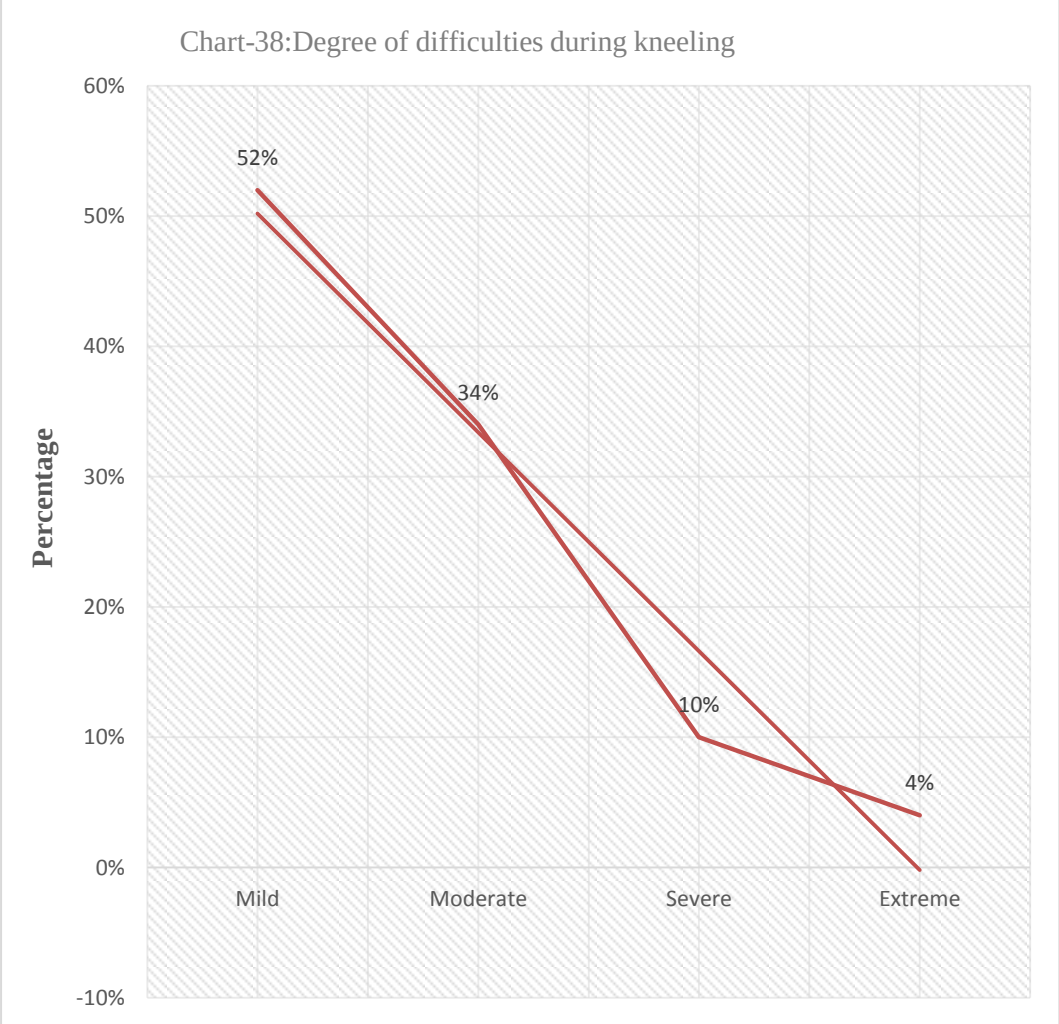
Degree of difficulty during twisting / pivoting on your injured foot/ ankle

Among 50 cricketers 4(8.0%) mild, 32(64.0%) moderate, 11 (22.0%) severe and 3 (6.0%) extreme difficulty during twisting / pivoting on your injured foot/ ankle.



Degree of difficulty during kneeling

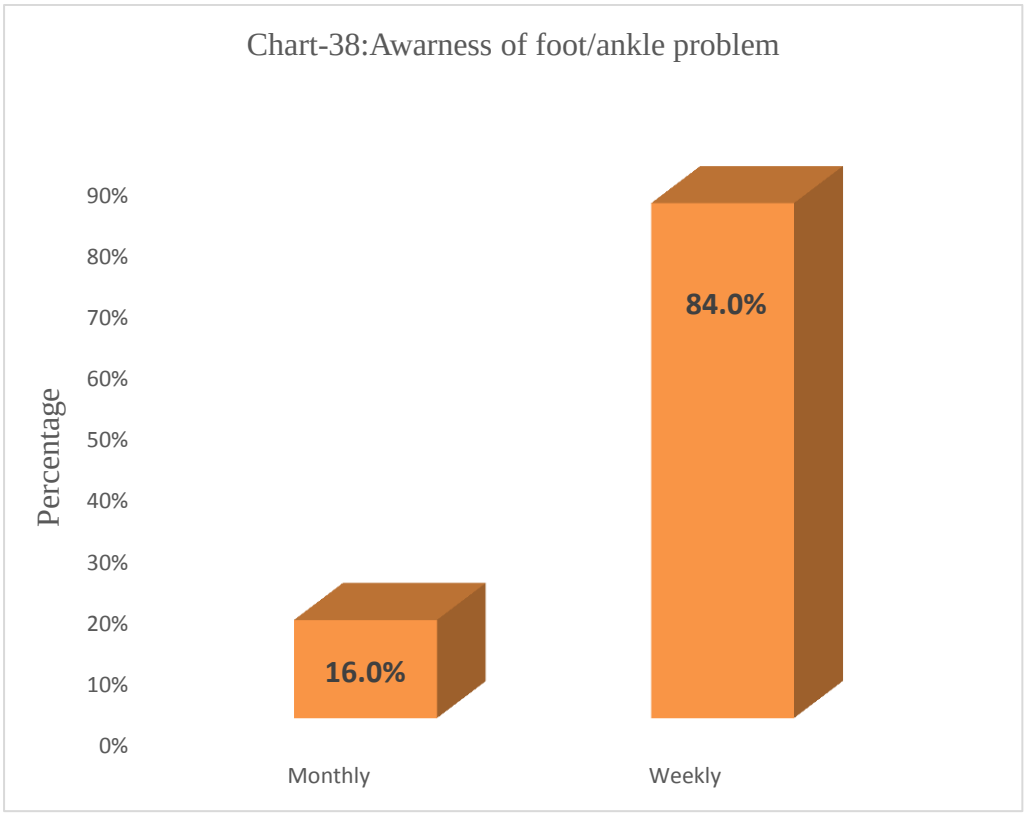
Among 50 cricketers 26(52.0%) mild, 17(34.0%) moderate, 5(10.0%) severe and 2 (4.0%) extreme difficulty during kneeling.



Quality of life (QOL)

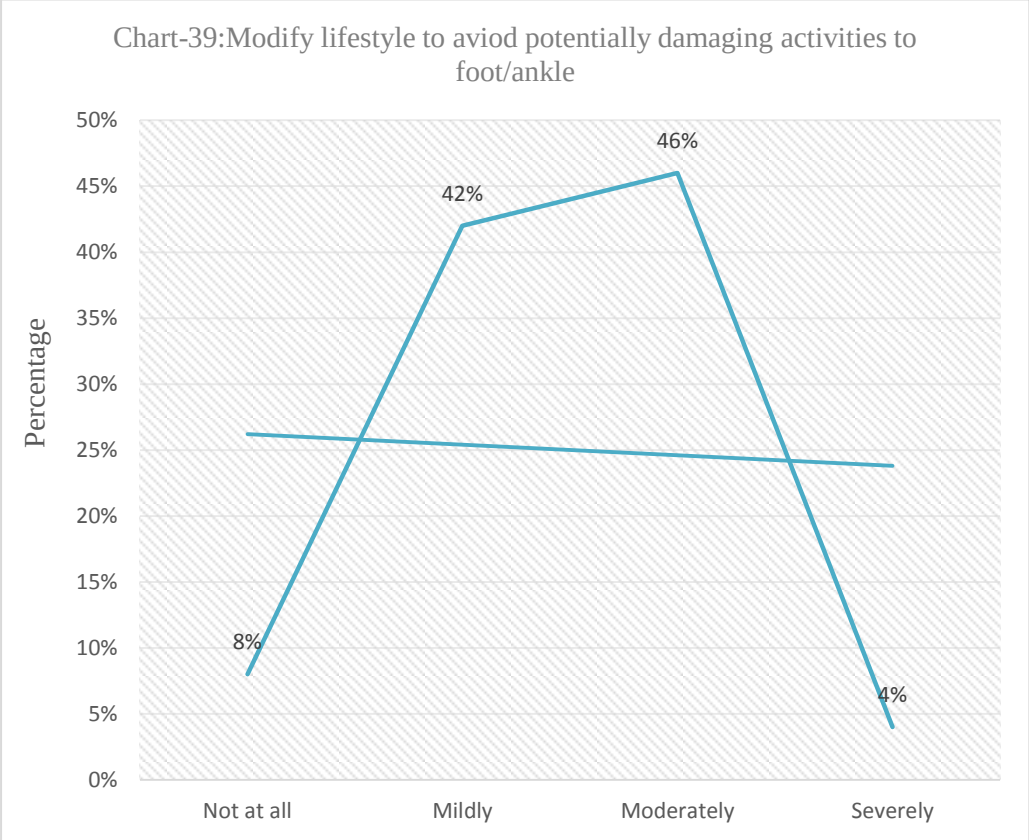
How often are you aware of your foot / ankle problem?

Among 50 participant 8(16.0%) monthly, 42(84.0%) weekly they were aware of their foot / ankle problem.



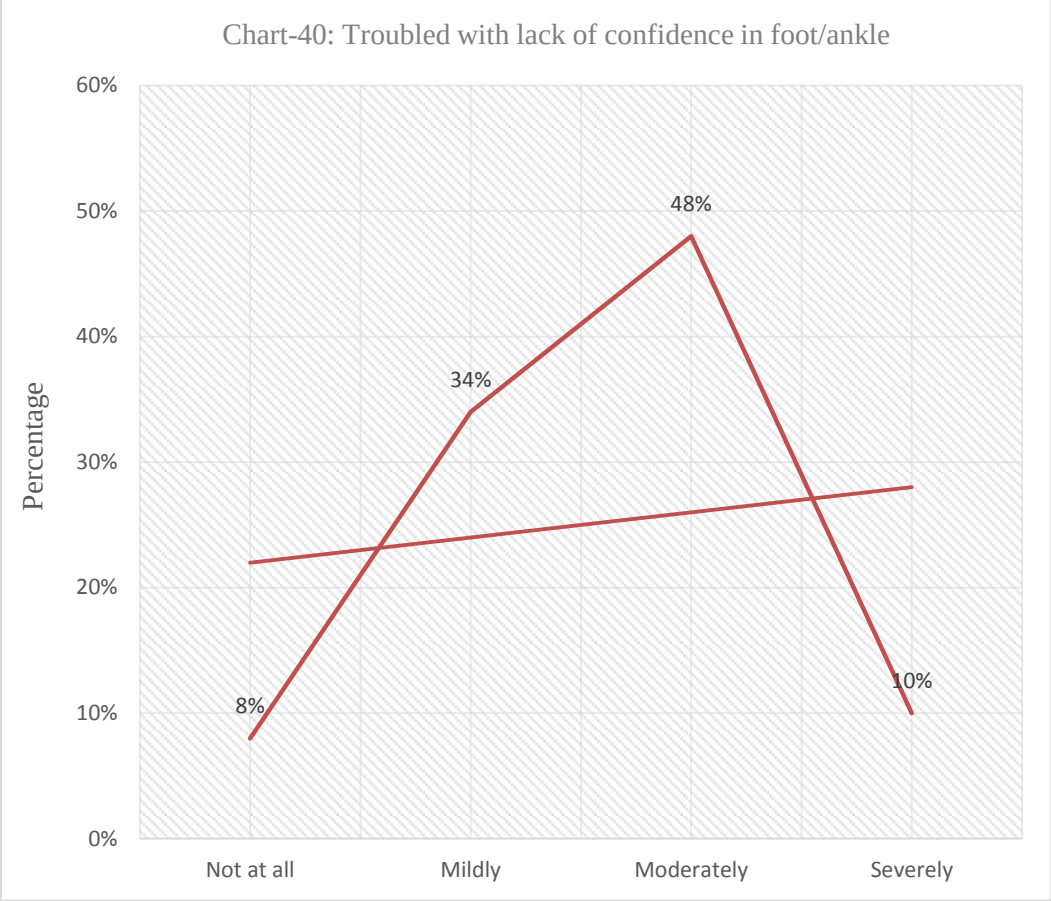
Have you modified your life style to avoid potentially damaging activities to your foot /ankle?

Among 50 cricketers 4(8.0%) not at all, 23(46.0%) mildly, 21(42.0%) moderately, 2 (4.0%) severely they had modified their life style to avoid potentially damaging activities to their foot /ankle.



How much are you troubled with lack of confidence in your foot / ankle?

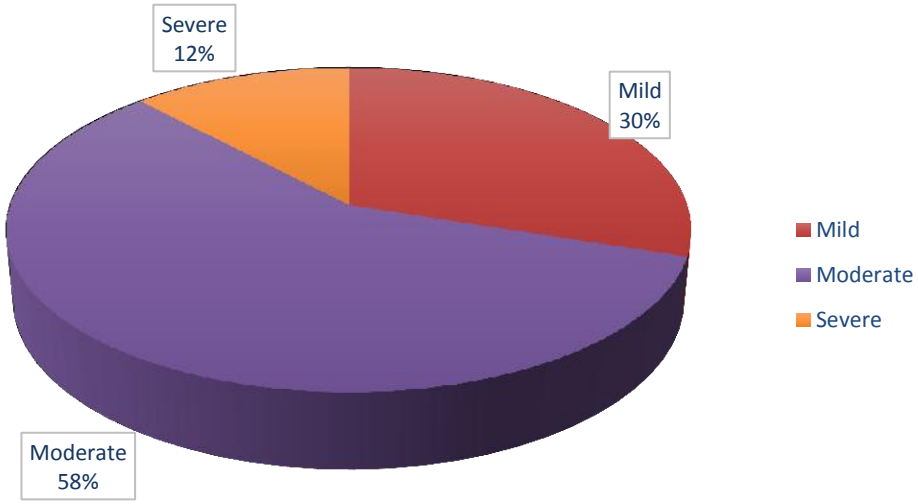
Among 50 cricketers 4(8.0%) not at all, 17(34.0%) mildly, 24(48.0%) moderately, 5 (10.0%) severely they troubled with lack of confidence in their foot / ankle.



In general, how much difficulty do you have with your foot/ ankle?

Among 50 cricketers 15(30.0%) mild, 29(58.0%) moderate, 6(12.0%) severe difficulty they had with their foot/ ankle.

Chart-41:How much difficulty do you have with your foot/ankle



Results of Independent t test:

	total	t	p
Pain	1,216	2.444	.018
Functional ability	1,985	.783	.437
Quality of life	534	.362	.719

CHAPTER-V DISCUSSION

Statistically the study is analyzed by unpaired t test (independent). Where the observed t value of pain between male and female (t= 2.444) has a p value 0.018 which is less than 0.05 with a degree of freedom 48 Therefore the test is significant at 5 % level of significance. . Hence we concluded that there is significant difference in pain between male and female in case of increasing. Statistically the study is analyzed by unpaired t test (independent). Where the observed t value of functionality of daily activities between male and female (t= 0.783) has a p value 0.437 which is greater than 0.05 with a degree of freedom 48 Therefore the test is no significant at 5 % level of significance. So we concluded that there is no significant difference in functional activities between male and female in case of functionality. Statistically the study is analyzed by unpaired t test (independent). Where the observed t value of quality of life between male and female (t= 0.362) has a p value 0.719 which is more than 0.05 with a degree of freedom 48. Therefore the test is no significant at 5 % level of significance. So we concluded that there is no significant difference in quality of life between male and female in case of quality.

According to Stretch (1992) found on his study that 37.5% of total ankle sprain injury occurred bowling (21.6%),bating (5.7%) and others (10.2%). According to this study among 50 participantscricketer's bowlers are mostly affected by the injuries in cricket. Among the 50 cricketers n=13 (26.0%) were batsman, n=27 (54.0%) were bowler, n=10 (20.0%) were all-rounder (both bowling and batting).

From this study we find that most common clinical feature of ankle sprain is pain .Pain mostly occurs during walking , bending ,going up and down stairs and twisting. Among 50 cricketers 9 (18.0%) mild, 36 (72.0%) moderate, 3 (6.0%) severe, 2 (4.0%) extreme pain during bending foot/ ankle fully. Among 50 cricketers 11 (22.0%) mild, 32 (64.0%) moderate, 5 (10.0%) severe, 2 (4.0%) extreme pain during walking on flat surface. Among 50 cricketers 11 (22.0%) mild,

34(68.0%) moderate, 3 (6.0%) severe, 2 (4.0%) extreme pain during going up or down stairs. According to this study most of the cricketers having ankle sprain suffer from moderate pain during descending stairs .the degree of difficulty of functionality. Among 50 cricketers 8(16.0%) mild, 39(78.0%) moderate, 1 (2.0%) severe and 2 (4.0%) extreme difficulty during descending stairs. Most of the participants about 39(78.0%) face moderate difficulty during ascending stairs. Most of the cricketers about 34(68.0%) mild having ankle sprain face mild difficulty during taking off socks/ stockings .Moderate difficulty 30(60.0%) participant among 50 cricketers face during bending to floor / pick up an object having ankle sprain. Cricketers having ankle sprain face difficulty in sports and recreational activities. Sports and recreational activities like squatting , running , jumping , twisting / pivoting on injured foot /ankle. During squatting 30% cricketers face severe difficulty. Cricketers having ankle sprain 48.0% face severe difficulty during running, 50.0% faces severe difficulty during jumping , 64.0% face severe difficulty during twisting / pivoting on injured foot/ ankle. The quality of life among cricketers having ankle sprain are hampered . Lack of confidence are seen among the cricketers due to ankle sprain and they have to modify their daily activities and practice. Due to ankle sprain 48% of cricketers are moderately troubled with lack of confidence in their foot / ankle , 46% mildy have modified their life style to avoid potentially damaging activities to their foot /ankle.

From other study it was found that most patients sought medical evaluation shortly after injury and were immobilized or braced; 32.7% re-ported formal or home-based physical therapy. Six to 18 months after injury, 72.6% reported residual symptoms. Of these, 40.4% reported at least 1 moderate to severe symptom, most commonly perceived ankle weakness; 40.3% were unable to walk 1 mile; and 43.3% were unable to jump or pivot on the ankle without symptoms. Factors associated with moderate to severe residual symptoms were reinjury of the ankle (odds ratio[OR], 7.21; 95% confidence interval [CI], 4.14-12.68),activity restriction longer than 1 week (OR, 2.04; 95%CI, 1.25-3.32), and limited weight bearing longer than28 days (OR, 2.16; 95% CI, 1.28-3.63).

This is a large-scale systematic review, which involved 227 published studies from 38 different countries. Injury patterns were reported in 70 different sports, with a total of 201 600 patients, including 32 509 patients with ankle injuries. A total of 14 098 ankle injuries were analyzed for the most common ankle-injury type, and 11 847 ankle sprains were included in this study. A high incidence rate does not give all the information about the sports injury. For example, among the listed sports with high ankle-injury and ankle- sprain incidence, soccer may have the highest number

The prognosis for isolated syndesmosis injuries, including the time to functional recovery, is unknown. The incidence of acute syndesmosis injury in moderate to severe ankle injuries requiring imaging is of the order of 5%. Historical features and special clinical tests of syndesmosis injury have not been proven reliable by clinical studies using evidence-based diagnostic criteria. Acute local tenderness of the anterior inferior tibiofibular ligament will indicate significant syndesmosis injury in only approximately half of nonspecific ankle injuries.

Fifty-five articles met the inclusion criteria. Compared with healthy controls, people with recurrent sprains demonstrated radiographic changes in the talus, changes in foot position during gait and prolonged time to stabilization after a jump. There were no differences in ankle range of motion or functional test performance. Pooled results showed greater postural sway when standing with eyes closed (SMD=0.9, 95% CI 0.4 to 1.4) or on unstable surfaces (0.5, 0.1 to 1.0) and decreased concentric inversion strength (1.1, 0.2 to 2.1) but no difference in evertor strength, inversion joint position sense or personal latency in response to a perturbation. According to Finch et al. (1999) in high level of Cricket overuse injuries are most common due to physical demand of the sport and particularly while delivering the ball. On the other hand spinal overuse injury occurs more due to a mixed bowling action. Overuse injuries becoming more common because increased participation in general sports and increased intensity and duration of training. It was found that overuse injuries is more prevalent after 24 months of regular daily training (Peterson et al. 2001).

CHAPTER VI CONCLUSIONAND RECOMMENDATION

6.1Conclusion

It is important to develop research based evidence of physiotherapy practice. Physiotherapist's practice which is evidence based in all aspect of health care. There are few studies on sports and sports injures in Bangladesh. This study cannot cover all aspects of the vast area. So, it is recommended that the next generation of physiotherapy members should continue study regarding this area; this may involve-use of large sample size and participants from different districts of Bangladesh. We may conduct research on other sports injuries and sports related health problems such as dehydration, lack of nutrition, conditioning etc where physiotherapists can work. Like common musculoskeletal problems among cricketers, prevalence of LBP among the fast bowlers, effectiveness of physiotherapy for the overuse injuries among cricketers, common causes of the cricket injuries, prevalence of sports injuries among cricketers due to overtraining are some areas of further studies for future researchers

6.2Recommendation

A recommendation envolves out of the context in which the study was conducted. The purpose of the study was to explore the clinical features, functionality and quality of life among cricketers having ankle sprain of BKSP. Though the research has some limitations but researcher identified some further stepsthat might be taken for the better accomplishment of further research. For the ensuring of the generalization of the research it is recommended to investigate large sample. In this study researcher only took the cricket players from BKSP in Savar. So for further study researcher strongly recommended to include the cricket players from all over Bangladesh. Due to limitation of time, investigator was not able to do pilot study. But pilot study is very much important for the validity of questionnaire. For this it is strongly recommended that if any further study will be done in this area then pilot study should be done to format the questionnaire.Beside this in this study the ratio of male and female participants were unequal.

So it is recommended for further study to take the participants equally for comparison of gender andcricket injuries.In this study investigator only identified the ratio of clinical features, functionality and quality of life among the injured cricket players, so it is recommended for further study to identify the prevalence of ankle sprain among the cricket players.

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APPENDIX-1

QUESTIONAIRE

FAOS

Today's date: _____/_____/_____ Date of birth: _____/_____/_____

Name:_____

Age:_____-_____

Sex:_____

Type/ Level of sports:_____

Duration of training:_____

INSTRUCTIONS: This study asks for your view about your foot/ankle. Thisinformation will help us keep track of how you feel about your foot/ankle and how well you are able to do your usual activities. Answer every question by ticking the appropriate box, only one box for each question. If you are unsure about how to answer a question, please give the best answer you can.

Symptoms

These questions should be answered thinking of your foot/ankle symptoms during the **last week**.

S1. Do you have swelling in your foot/ankle?

Never Rarely Sometimes Often Always

S2. Do you feel grinding, hear clicking or any other type of noise when your foot/ankle moves?

Never Rarely Sometimes Often Always

S3. Does your foot/ankle catch or hang up when moving?

Never Rarely Sometimes Often Always

S4. Can you straighten your foot/ankle fully?

Always Often Sometimes Rarely Never

S5. Can you bend your foot/ankle fully?

Always Often Sometimes Rarely Never

Stiffness

The following questions concern the amount of joint stiffness you have experienced during the **last week** in your foot/ankle. Stiffness is a sensation of restriction or slowness in the ease with which you move your joints.

S6. How severe is your foot/ankle stiffness after first wakening in the morning?

None Mild Moderate Severe Extreme

S7. How severe is your foot/ankle stiffness after sitting, lying or resting **later in theday**?

None Mild Moderate Severe Extreme

Pain

P1. How often do you experience foot/ankle pain?

Never Monthly Weekly Daily Always

What amount of foot/ankle pain have you experienced the **last week** during the following activities?

P2. Twisting/pivoting on your foot/ankle

None Mild Moderate Severe Extreme

P3. Straightening foot/ankle fully

None Mild Moderate Severe Extreme

P4. Bending foot/ankle fully

None Mild Moderate Severe Extreme

P5. Walking on flat surface

None Mild Moderate Severe Extreme

P6. Going up or down stairs

None Mild Moderate Severe Extreme

P7. At night while in bed

None Mild Moderate Severe Extreme

P8. Sitting or lying

None Mild Moderate Severe Extreme

P9. Standing upright

None Mild Moderate Severe Extreme

Function, activities of daily living (ADL)

The following questions concern your physical function. By this we mean your ability to move around and to look after yourself. For each of the following activities please indicate the degree of difficulty you have experienced in the **last week** due to your foot/ankle.

A1. Descending stairs

None Mild Moderate Severe Extreme

A2. Ascending stairs

None Mild Moderate Severe Extreme

For each of the following activities please indicate the degree of difficulty you have experienced in the **last week** due to your foot/ankle.

A3. Rising from sitting

None Mild Moderate Severe Extreme

A4. Standing

None Mild Moderate Severe Extreme

A5. Bending to floor/pick up an object

None Mild Moderate Severe Extreme

A6. Walking on flat surface

None Mild Moderate Severe Extreme

A7. Getting in/out of car

None Mild Moderate Severe Extreme

A8. Going shopping

None Mild Moderate Severe Extreme

A9. Putting on socks/stockings

None Mild Moderate Severe Extreme

A10. Rising from bed

None Mild Moderate Severe Extreme

A11. Taking off socks/stockings

None Mild Moderate Severe Extreme

A12. Lying in bed (turning over, maintaining foot/ankle position)

None Mild Moderate Severe Extreme

A13. Getting in/out of bath

None Mild Moderate Severe Extreme

A14. Sitting

None Mild Moderate Severe Extreme

A15. Getting on/off toilet

None Mild Moderate Severe Extreme

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For each of the following activities please indicate the degree of difficulty you have experienced in the **last week** due to your foot/ankle.

A16. Heavy domestic duties (moving heavy boxes, scrubbing floors, etc.)

None Mild Moderate Severe Extreme

A17. Light domestic duties (cooking, dusting, etc.)

None Mild Moderate Severe Extreme

Function, sports and recreational activities

The following questions concern your physical function when being active on a higher level. The questions should be answered thinking of what degree of difficulty you have experienced during the **last week** due to your foot/ankle.

SP1. Squatting

None Mild Moderate Severe Extreme

SP2. Running

None Mild Moderate Severe Extreme

SP3. Jumping

None Mild Moderate Severe Extreme

SP4. Twisting/pivoting on your injured foot/ankle

None Mild Moderate Severe Extreme

SP5. Kneeling

None Mild Moderate Severe Extreme

Quality of Life (QOL)

Q1. How often are you aware of your foot/ankle problem?

Never Monthly Weekly Daily Constantly

Q2. Have you modified your life style to avoid potentially damaging activities to your foot/ankle?

Not at all Mildly Moderately Severely Totally

Q3. How much are you troubled with lack of confidence in your foot/ankle?

Not at all Mildly Moderately Severely Extremely

Q4. In general, how much difficulty do you have with your foot/ankle?

None Mild Moderate Severe Extreme

Thank you very much for completing all the questions in this questionnaire.

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

Ref. CRP-BHPI/IRB/10/19/1361

Date: 16/10/2019

To
Mitanur Islam Mitu
B.Sc. in Physiotherapy
Session: 2014-2015 Student ID: 112140268
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal **"Clinical features, functionality and quality of life among cricketers having ankle sprain of BKSP"** by ethics committee.

Dear Mitanur Islam Mitu,
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above mentioned dissertation, with yourself, as the Principal investigator. The Following documents have been reviewed and approved:

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

The purpose of the study is to determine the clinical features, functionality and quality of life among cricketers having ankle sprain of BKSP. The study involves use of a questionnaire to find out the clinical features, functionality and quality of life among cricketers having ankle sprain. There is no likelihood of any harm to the participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 9.00AM on 11th August, 2018 at BHPI.

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

Best regards,

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

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স্মারক নং : ৩৪.০৪.০২০০.০০৬.১৮.০৩৯.১৪/০১৬৭ তারিখ: ০৫ ভাদ্র ১৪২৬ বঙ্গা.
২০ আগস্ট, ২০১৯ খ্রি:

প্রাপকঃ অধ্যাপক মোঃ ওবায়দুল হক
উপাধ্যক্ষ
বাংলাদেশ হেল্‌থ প্রফেশন্স ইনষ্টিটিউট (বিএইচপিআই)
সাভার, ঢাকা।

বিষয়ঃ বাংলাদেশ হেল্‌থ প্রফেশন্স ইনষ্টিটিউট (বিএইচপিআই) বিএসসি ইন ফিজিওথেরাপি কোর্সের ৪র্থ বর্ষের শিক্ষার্থীর গবেষণা ও ডাটা সংগ্রহের সহায়তা প্রদান প্রসঙ্গে।

তারিখ- ০৬/০৭/২০১৯খ্রি।

জনাব,

উপর্যুক্ত বিষয়ের প্রেক্ষিতে জানানো যাচ্ছে যে, ২০/০৮/২০১৯ তারিখ হতে ২৯/০৯/২০১৯ তারিখ পর্যন্ত বাংলাদেশ হেল্‌থ প্রফেশন্স ইনষ্টিটিউট (বিএইচপিআই) শিক্ষার্থীর গবেষণা ও ডাটা সংগ্রহের জন্য বিকেএসপি কতৃপক্ষের সম্মতি জ্ঞাপন করা হলো। উল্লেখ্য, উক্ত সময় অত্র প্রতিষ্ঠানের কোন যন্ত্রাংশের ক্ষতি সাধিত না হয় সেদিকে নজর দেয়ার জন্য এবং যাবতীয় নিয়ম-কানুন মেনে চলার জন্য অনুরোধ করা হলো।

২০/০৮/২০১৯
নুসরাৎ শারমিন
উপপরিচালক (ক্রীড়াবিজ্ঞান) অ.দা.
বিকেএসপি।

অনুলিপিঃ
১। মহাপরিচালক মহোদয় (সদয় অবগতির জন্য), বিকেএসপি।
২। পরিচালক (প্রশাসন ও অর্থ), বিকেএসপি।
৩। পরিচালক (প্রশিক্ষণ), বিকেএসপি।
৪। অধ্যক্ষ, বিকেএসপি।
৫। উপপরিচালক (প্রশিক্ষণ) বিকেএসপি।
৬। ক্রীড়াবিজ্ঞান শাখার সকল কর্মকর্তা।
৭। জনাব..... মিতাবনুর ইসলাম মিতু.....
৮। সংশ্লিষ্ট নথি।