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SATISFACTION OF PATIENTS AFTER RECEIVING PHYSIOTHERAPY TREATMENT FOR THEIR KNEE OSTEOARTHRITIS FROM CENTRE FOR THE REHABILITATION OF THE PARALYSED

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"SATISFACTION OF PATIENTS AFTER RECEIVING PHYSIOTHERAPY TREATMENT FOR THEIR KNEE OSTEOARTHRITIS FROM CENTRE FOR THE REHABILITATION OF THE PARALYSED"

Submitted by, **TamannaZahanTithee**for partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (B.Sc. in 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 bound to take written consent of my supervisor and Head of the Physiotherapy Department, BHPI.

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CONTENTS

Page No

Page No

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Acronyms

ADL	Activities of Daily Living
BHPI	Bangladesh Health Professions Institute
BMI	Body Mass Index
CRP	Centre for the Rehabilitation of the Paralysed
IRB	Institutional Review Board
IRR	Infrared Radiation
MRI	Magnetic Resonance Imaging
OA	Osteoarthritis
PFOA	Patellofemoral Osteoarthritis
ROM	Range Of Motion
SES	Socio Economic Status
TFOA	Tibiofemoral Osteoarthritis
TENS	Transcutaneous Electrical Nerve Stimulation
U.S.A	United States of America
UST	Ultrasound
VAS	Visual Analogue Scale

WHOWorld Health Organization

List of Tables

Abstract

Purpose:The purpose of the study was to find out the patient's satisfaction towards physiotherapy treatment for knee osteoarthritis from CRP.***Objectives:*** To gather patient'sconcepts, ideas, needs and recommendation's towards physiotherapy treatment, to find outthe satisfaction or dissatisfaction of patients along with their reasons, to identify theunderstanding between patients and the clinical physiotherapists, to find out patients satisfaction about their functional activities after taking physiotherapy treatment, to find out the significance andimportance of physiotherapy in their daily living and to gather the patients'opinions towards the overall environment and duration of treatment times.***Methodology:***Qualitative researchmethod was used with self-administered questionnaire. ***Data analysis:***Qualitative content analysis was used to analyze the data. ***Results & Discussion:***Nine participants (Male: Female = 2:7) were interviewed at Centre for the Rehabilitation of the Paralysed (CRP), Savar,Dhaka. Ten separatethemes were identified from this study. The major findings of the theme were; every participant expressed their satisfaction towards physiotherapy treatment of CRP, in here overallenvironment was perfect. Duration & frequency which was selected and organized by theauthoritywas enough for the participants, there was a good understanding between patients & thetherapist. ***Conclusion:***This study is a reflection of patient's satisfaction towards the physiotherapy treatment. Finally, the results indicated that almost all of the patients weresatisfied with physiotherapy treatment for their knee osteoarthritis and they rated it as highly satisfactory.Most of them agreed that they would use the same health facilities in future if needarises. This is also the first study in this area.

Keywords: Knee osteoarthritis, Physiotherapy,Patient's satisfaction.

CHAPTER-I INTRODUCTION

1.1 Background

Osteoarthritis (OA) is a non-inflammatory condition of synovial joints. It is characterized by loss of hyaline cartilage and remodeling of the surrounding bone (Goddard & Dickey, 2019). Knee osteoarthritis is considered as one of the most debilitating disorders which are most commonly associated with pain and functional impairment. Knee OA negatively affects quality of life and it is characterized by deterioration of the articular cartilage and subchondral bone sclerosis as a result of biomechanical and metabolic factors (Nazari et al., 2019).

Osteoarthritis (OA) is a usual joint disorganization, with the knee being one of the most regularly involved areas. It is normally characterized by means of degradation of cartilage and other peri-articular structures and results in ache and stiffness, that could cause significant disability and in turn to decline of quality of life and work impairment(Bevers et al., 2014). In global there are many commonplace musculoskeletal conditions; osteoarthritis is one of the most commonplace situations, affecting the joints and loss of purposeful abilities of hundreds of thousands of people (Kruger-Jakins et al., 2016).

OA is categorized by joint pain and loss of joint mobility. It is accompanying with lack of joint cartilage and modifications in underlying bone surfaces often go with trauma or degenerative change. It is the principal cause of pain and disability in public, is connected with substantial loss of quality of life, and is the principal circumstance to joint substitute surgical procedure of the hip and knee (Williams et al., 2010). Worldwide knee OA is affecting over 241 million people and the knee is one of the most commonly affected joints, and poses a significant burden to the healthcare system (Goddard & Dickey, 2019).

In the United States osteoarthritis (OA) is the most shared joint disorder. Among adults 60 years of age or older the prevalence of symptomatic knee OA is approximately 10% in men and 13% in women. The amount of people affected with symptomatic OA is expected to rise because of the elderly of the population and the obesity epidemic (Zhang & Jordan, 2010). OA prevalence specify that women, older

adults, and those who are obese or have a history of a knee injury have a moderate to strongly bigger risk of knee symptoms, and radiographic and symptomatic OA. Most knee OA prevalence has showed associations between risk factors and knee OA consequences (Murphy et al., 2016).

Knee Osteoarthritis (OA) is the most common form of joint syndrome and incidence of both radio-graphically evident and symptomatic. The female's percentage having advanced frequency than male's percentage (11.4% vs. 6.8%). The gender difference in prevalence has just been highlighted in meta-analyses, which offers indication for a greater risk in females for prevalent and incident knee OA. The meta-analysis also showed that females have a tendency to have more severe knee OA radio-graphically considered than males and that the gender differences rise with age > 55 years (Hafez et al., 2014).

Arthritis is the utmost chronic disorder producing severe long-term pain and physical disability in the Australian community, affecting 14% of the overall population in 2001.The incidence of arthritis progresses with oldness. In 2001, the circumstance was reported by 43% of people age 65 to 74 years and over half (52%) of people age 75 years and over. OA is considered the third largest contributor to life years lost due to disability, with 4.8% of total life lost due to disability.The rate of OA is higher among women than men amongst all age groups(Williams et al., 2010). In the world osteoarthritis (OA) is one of the most common musculoskeletal complaints where it affects 2693 of every 100,000 women and 1770 of every 100,000 men (Kirthika et al., 2018).

It's been anticipated that the getting old population will provide rise to better incidence of disabling OA, as globally the number of humans aged over 60 years is predictable to increase by way of 20% to 33% by means of 2030. Osteoarthritis is a main universal cause of financial loss. Getting old population, along with increases in weight problems and physical state of being inactive could increase the monetary burden to society of disablement because of OA (Wright et al., 2011).

Osteoarthritis (OA) is the most conventional form of arthritis in the elderly. Studies have reported that symptomatic knee OA is greater universal in women than in men. Alternatively, in some countries the gender distinction in the prevalence of symptomatic knee OA is low or non-existent. Radiographic knee OA, however, is

much more predominant in women than in men in comparison to symptomatic knee OA. As an instance, within the U.S.A the frequency of radiographic knee OA in adults ages 60 and older is 42.1% in women and 31.2% in men. In Japanese sufferers 60-69 years of age the incidence of radiographic knee OA is 57.1% in women and 35.2% in men (Debi et al., 2009).

Knee osteoarthritis (OA) is considered as an important burden on health care system with a general reason for pain and limitation of activity. OA mainly affects knee joint with symptoms arise such as pain, stiffness, muscle weakness and atrophy, loss of balance and limitation in physical function (Yilmaz et al., 2019).

Knee osteoarthritis (OA) is characterized by way of pain, articular cartilage deterioration, joints pace narrowing, and decreased muscle power. Approximately 60 million Americans have knee OA, and this number will increase by means of 50% for the duration of the subsequent decade. Knee pain during motion caused by OA is a robust predictor of an increased need for functional assistance and is the second main cause of incapacity in the United States of America. Approximately 10%-30% of human beings recognized with OA have pain intense enough to function and cause disability, and this percentage is increasing (Vincent et al., 2012).

Nearly 6% of Asian males and 12% of Asian females are suffering from knee OA. The incidence of OA rises with age and mostly affects women more frequently than men. The populations of many Asian countries are getting old quickly, and it is expected that between 2008 and 2040, the proportion of the Singaporean population aged 65 years old and over will be increased by 316% (Elbaz et al., 2014). Knee OA may be related with symptoms of pain, instability, decrease joint range of motion (ROM) and subsequently deterioration in quality of life and function. These functional restrictions are the consequences of an increase of the risk of morbidity and mortality (Imoto et al., 2012).

Pain from OA is an important sign in the decision to seek medical care and is a vital maker to disability. Due to its high dominance and the frequent disability that accompanies disease in most important joints such as the knee and hip, OA is responsible for more difficulty with climbing stairs and walking than any other disease. OA is similarly the most common cause for total hip and total knee replacement (Zhang & Jordan, 2010).

As per OA is considered by synovial joint abnormalities that may include structural and compositional changes to bone, cartilage, meniscus, synovium, and other soft tissues of the joint Whereas late stage OA is frequently characterized by both demonstrable structural damage and patient reports of joint pain, stiffness and disability. Around there is only a weak correlation between symptoms and pathology, particularly in initial stages of the disease (Lane et al., 2011).

Knee OA is considered as a multi-factorial disease. The cause of OA is still unknown; it is said there is strong evidence for major risk factors, such as age, obesity, joint trauma, and heavy work load (Hafez et al., 2014). The progression of disease is due to the relationship between systemic and local risk factors where the systemic factors include race, age, gender, genetic, hormonal, bone density and nutritional factors and the local factors are weight gain, traumatic conditions, occupation, functional movement and muscle weakness. OA occurs more often in the elderly population and knee osteoarthritis most commonly developments in women after menopause which is revealed by some studies (Yilmaz et al., 2019).

Unusual mechanical loading in several sport activities or during heavy work may activate the biochemical cascade that leads to joint degeneration and pain, but similarly even in normal mechanical loading if the cartilage is damaged.Aging is the most important risk factor for knee OA. Knee OA is more common in obese people than in people of normal weight(Hafez et al., 2014).Joint injury is raising the risk for knee OA. Afterward knee injury, women had a three-fold and men a 5 to 6 fold risk for emerging of knee OA, compared to healthy controls. Injuries to the anterior cruciate ligament associate most evidently with the rate of knee OA (15-20%). As per many as 50-70% of patients with complete anterior cruciate ligament rupture, accompanied by related injuries to the meniscus or other ligaments, exhibit radiographic knee OA changes after 15-20 years. Moreover, at 10 to 20 years after anterior cruciate ligament or menisci injury, on average, half of those patients have suggestive knee OA (Hafez et al., 2014).

Presently, no cure for OA is recognized. But, disease-related factors, such as impaired muscle function and reduced fitness, are possibly agreeable to exercise therapy (Fransen et al., 2015). There is a strong confirmation to support the use of a number of physiotherapy treatments in themanagement of knee joint osteoarthritis (Arshad et

al., 2015). The most important treatment goals for OA are to lessen and control pain, increase function, recover or maintain joint mobility, and decrease or prevent physical disability. Weight loss with exercise and dietary changes may reduce the direct loads concerning the affected joints, with the hip and knee in individual (Verma&Agarwal, 2013).

In managing OA exercise is reflected as an important component irrespective of severity, as it lessens pain and improves function where regular exercise including stretching and strengthening are the standard of care for individuals with knee OA besides, exercise programs have been shown to improve balance when evaluated long term (Goddard & Dickey., 2019). Exercise therapy takes a multitude of methods and results in several systemic and local effects, some of which have been examined among people with knee OA. Therapeutic exercise covers a range of targeted physical activities that directly goal to increase muscle power, neuro-motor control, joint range of motion and aerobic capability(Fransen et al., 2015).

Maximum exercise interventions for OA conservatively fall into one of the following physical performance categories: strengthening, aerobic, flexibility and skills/balance (Goh et al., 2016). Strength training, low-impact aerobic exercises, aquatic programs and flexibility exercises are recommended exercises for knee OA (Ledingham et al., 2019). In theory, the health benefits added are specific to the type of exercise. Such as, aerobic activity to develop cardiorespiratory fitness can improve sleep and well-being and decrease all-cause mortality, while strengthening primarily recovers local muscle function and proprioception to improve joint strength and local biomechanical functioning. Though, there is evidence that both forms of exercise can reduce pain and improve function so both are suggested in latest guidelines. Other than strengthening or aerobic exercises, range of motion (ROM) exercise is similarly supposed to be beneficial in improving symptoms and function (Goh et al., 2016).Treatment to alleviate pain and improve function in adults with osteoarthritis exercise is known as an established treatment and it is a planned structured intervention with the intention to improve health or maintain physical fitness (Ledingham et al., 2019).

This is especially beneficial when functional and structural properties of peri-articular soft tissue have been negotiated following acute knee swelling or prolonged joint

immobilization(Goh et al., 2016). Puett and Griffin reviewed 15 RCT studies related to non-invasive and protective treatments knee OA established that exercise decreases the pain as well as improves the function (Nejati et al., 2015). One of the chief purposes of exercise is to improve muscle power, agreed that weakness is common in knee OA. Strength training of adequate dosage may address muscle weakness by improving muscle mass and/or recruitment (Fransen et al., 2015).

Decreasing pain and improving knee range of motion, muscle strength, balance, and functional mobility are focused on remaining physical therapy interventions for knee OA but it is necessary to focus on proprioceptive accuracy of the knee which when neglected can have a lethal effect during rehabilitation (Kirthika et al., 2018).

Still, among patient groups, pain must be considered and may be a barricade, therefore leading to under dosage of the strength stimulus. Improved strength of the lower limb can minimize internal knee forces, decrease pain and improve physical function. Increased muscle power may adjust biomechanics, resulting in a reduced joint loading rate or localized stress in the articular cartilage, thus playing an important role in delaying initiation and enhancing progression of knee OA. Improved fitness may boost quality of life by allowing a greater range of available daily tasks, thus improving physical function (Fransen et al., 2015). It is established that physiotherapy interventions which include ROM exercises, strengthening exercises, joint mobilizations and management advice are strongly suggested by current research(Reid et al., 2014).

Exercise therapy alone or with other modalities show an important role in improving symptoms and physical function in knee osteoarthritis as well as there are several pieces of proof demonstrating the positive effect of regular exercise therapy on increasing muscle strength and endurance, reducing joint stiffness, enhancing proprioceptive efficiency, improving balance, and the quality of life of the patients. It is also said that, available evidence has shown physical modalities plus exercise can improve clinical outcomes in knee OA patients (Nazari et al., 2019).

1.2 Rationale

In developed countries osteoarthritis (OA) is now the most common form of articular disease and a principal cause of chronic disability, mostly as an outcome of knee OA (Plotnikoff et al., 2015). Osteoarthritis causes the cartilage of knee joint to thin and the surfaces of the joint to become rougher, which means that the knee doesn't move as smoothly as it should, and it might feel painful and stiff. Knee pain contributes significantly to disability among elders. The prevalence of Knee Osteoarthritis is about 10% in Bangladesh (Radha&Gangadhar, 2015). It has been estimated that 25% or more of older persons have presented knee pain. The etiology of OA has is multi-factorial, with different sets of factors associated with its prevalence (Plotnikoff et al., 2015). The most common cause of osteoarthritis of the knee is age. However, several factors increase the risk of developing significant arthritis at an earlier age, these are age, weight, heredity, gender, repetitive stress injuries,athletics and other illnesses like people with rheumatoid arthritis metabolic disorders such as iron overload or excess growth hormone, also run a higher risk of osteoarthritis.

Most of the available literature shows that there is no effective treatment for osteoarthritis, and individuals with this disease have little benefit from prescribed medications but primarily exercise therapy and recently manual therapy is considered effective treatment for knee osteoarthritis patients. There are many physiotherapy treatment programs for knee joint osteoarthritis at musculoskeletal unit in CRP). It is usually authorized that quality service are those, which gratify the people. Finding the satisfaction of the patient to physiotherapy will include patient's thought, opinion, belief, needs and recommendation.

In this study patient reflection of concepts and ideas are very much important, because this is qualitative study, which allow explanation of the concept of the participants. This study may help to exclude or include, modify, redesign or continue the therapy service for knee osteoarthritis patients who will get benefit in future and which will help to develop physiotherapy service in Bangladesh. For that reason researcher interested to conduct this research to find out knee osteoarthritis patient's satisfaction about physiotherapy services.

1.3 Research question

What is the level of satisfaction of patients after receiving physiotherapy treatment for knee osteoarthritis?

1.4 Objectives

1.4.1General objective

- To identify the patient's satisfaction about physiotherapy treatment for their knee osteoarthritis from CRP.

1.4.1 Specific objectives

1. To identify the characteristics of socio demographic profile of patients with knee OA.
2. To identify level of pain changes after taking physiotherapy treatment.
3. To find out the compared treatment getting between other hospital and from CRP.
4. To deliver patients opinion about services of physiotherapy department from CRP those who have knee pain.
5. To find out any problems during receiving physiotherapy treatment.
6. To gather patient's recommendations and to explore possible solution to meet the patient's needs.
7. To explore the possible reasons of patients being satisfied or dissatisfied.
8. To find out opinion about CRP's outdoor environment.
9. To find out patient's satisfaction with cost of treatment at CRP.
10. To find out patients satisfaction in term of patient and therapist communication.
11. To find out patients satisfaction about facilities (therapy room, waiting room, and supporting staff) of physiotherapy department.

1.5 Operational Definition

Pain: The North American Nursing Diagnosis Association defines that pain is a state, in which an individual experiences and reports severe discomfort or an uncomfortable sensation;the reporting of pain may be either by direct verbal communication or by encoded descriptors.

Osteoarthritis: Osteoarthritis (OA) is a long-term chronic disease characterized by the deterioration of cartilage in joints which results in bones rubbing together and creating stiffness, pain, and impaired movement.

Knee Osteoarthritis: Knee Osteoarthritis (OA) is a long-term chronic disease characterized by the deterioration of cartilage in knee joints which results in bones rubbing together and creating stiffness, pain, and impaired movement.

Satisfaction: Satisfaction is the act of fulfilling a need, desire, or appetite, or the feeling gained from such fulfillment.

Activities of Daily Living: The things we normally do in daily living including any daily activity we perform for self-care such as feeding ourselves, bathing, dressing, grooming, work, homemaking, and leisure.

Range of Motion: Range of Motion is the measurement of movement around a specific joint or body part.

Obesity: Obesity is defined as abnormal or excessive fat accumulation that presents a risk to health or the state of being well above one's normal weight.

CHAPTER: II LITERATURE REVIEW

Osteoarthritis (OA) is known as the most common chronic joint disorder in adults which can be defined as a loss of articular cartilage and other structural changes (Imoto et al., 2019). Knee osteoarthritis (OA) is now one of the major public health problem which results in chronic pain and disability among elderly. Including joint space narrowing and osteophytosis it has several pathological features (Muraki et al., 2013). Osteoarthritis (OA) is a very common rheumatic disease, mostly affects the articular cartilage and sub-chondral bone of a joint and results in joint failure (Fransen et al., 2015).

Knee osteoarthritis is an age-associated disorder of the musculoskeletal system which commonly causes knee pain and physical foundational limitations where as well as impaired neuromuscular function may contribute to the development and/or progression of knee OA (Lai e al., 2018).

OA indicates articular cartilage damage, bony osteophyte formation, and sclerosis of the subchondral bone and subchondral cyst formation may be seen pathologically in advanced cases (Lespasio et al., 2017). The so-called mechanism leading to joint damage is poorly understood but it maybe multifactorial (including oxidative damage, thinning of cartilage, muscle weakening, and a reduction in proprioception)(Palazzo et al., 2016).

Osteoarthritis (OA), also known as osteoarthrosis or degenerative joint disease, is the most usual form of arthritis which is a leading cause of chronic disability between fourth and fifth decade of life. The name osteoarthritis derived from observation of the striking overgrowth of marginal and subchondral bone by the pathologists and radiologists(Radha&Gangadhar, 2015). Osteoarthritis (OA) is a commonly resulting in pain, fatigue, functional limitations, increased healthcare utilization and high economic costs to society (Hafez et al., 2014). Predominantly the knee joint is involved which resulting in physical symptoms of pain, swelling and reduced function as well as psychosocial symptoms of anxiety depression and hampered quality of life (Walsh et al., 2017).

As osteoarthritis (OA) is the most prevalent form of arthritis so the prevalence of knee OA is expected to rise. The associated symptoms of knee OA are pain, functional disability and deteriorated quality of life that might lead to further morbidity where 10% of Asian males and 13% of Asian females report knee pain (Elbaz et al., 2014).

Symptoms of knee OA are described by pain, joint stiffness, crepitus, edema, and muscle dysfunction, loss of joint mobility, and locking or buckling. It deteriorates muscle function through weakness, atrophy and neuromuscular inhibition. There is functional limitations which include 30% of adults with knee OA have difficulty rising from a chair, 45% have difficulty walking one-quarter mile, and 47% have difficulty negotiating 10 steps and it is considered as consequential outcomes (Ledingham et al., 2019).

The incidence of musculoskeletal conditions is rising globally (World Health Organization 2003). Osteoarthritis (OA) is one of the most common musculoskeletal conditions. It is usually accompanied by a range of symptoms including pain and loss of function. OA is thought one of the most common reasons of severe long-term pain and disability. Disability is accompanying with lack of function, which in turn has harmful consequences for the individual's daily living activities and as well as health-related quality of life (Kruger-Jakins et al., 2016). Approximately one third of all adults have radiological symptoms of osteoarthritis, even though clinically substantial osteoarthritis of the knee, hand, or hip in only 8.9% of the adult population (Verma&Agarwal, 2013). About 6% of all adults have knee osteoarthritis (OA) (Murphy et al., 2015). The possibility of developing osteoarthritis rises with age (Verma&Agarwal, 2013).

Joint pain, stiffness; decreased range of joint movement, muscle weakness of the quadriceps and alterations in proprioception are the chief clinical manifestations. Reduced strength in the muscle groups including the joints is important because it causes progressive loss of function. The symptoms of OA of knee can significantly restrict the individual's ability to get up from a chair, walk, or climb stairs. Walking with a limp, poor orientation of the limb and instabilities can noticeable inindividuals with OA. During movements, crepitation maybe heard as a result of arthritis of the irregular joint surfaces(Hafez et al., 2014).

A widespread range of symptoms was narrated by patients with OA of the knee where pain was the most prominent symptom. Swelling, deformity, tightness or stiffness,weakness or numbness, presence of sound on movement, inability to bend the knee, etc which were stated as additional symptoms. The pattern, duration, and progression of symptoms were highly variable among patients. On the other hand, nearly half (55%) described the influence of weather associated with cold wind, rain, and increased humidityon their knee pain, with exacerbations (Chan & Chan, 2011).

Knee OA can be taken place in either the patellofemoral joint (PF), the tibiofemoral joint (TF), or both. Combined TFOA and PFOA (44%) is the most predominant radiographic disease pattern, followed by isolated PFOA (25%), and isolated TFOA (1%) in middle-aged individuals with chronic pain. The relationship between radiological compartmental involvement and symptoms also remains indistinct. Researchers have discovered whether disease severity in the different compartments is related with symptom severity, and PFOA severity appears to have a greater association with pain.When associating compartment distribution in persons who had goes through meniscectomy, the combined TFOA and PFOA disease pattern was associated with worse symptoms, poorer function, and worse knee-related quality of life compared to those with isolated TFOA (Hart et al., 2018).

For people with knee osteoarthritis (OA) pain is the major stimulus to seek medical attention but then the causes of pain are complex and radiographs which are the standard for clinical imaging in OA are often disagreeable with symptoms. There has been increasing importance in the role of the synovium in painful OA in current years. However nowhere as florid or extensive as the inflammation saw in rheumatoid arthritis, clinical effusions and capsular thickening can be clinically apparent in some joints with knee OA, and are more frequently observed using sensitive measures such as ultrasound (US) and MRI. Synovial changes in OA are considered by many as a secondary response to the degradation of cartilage though there are others who advocate them as a primary driver for OA which may be partially accountable for pain and disease progression (Hall et al., 2014).

Pain is a most important symptom of knee OA and even though gender differences in pain experience have been earlier observed, results remain blurred. Females report more severe clinical pain than males and that is indicated by some studies, while other

studies have not found differences in pain levels between genders. Moreover, it is also well-known that patients with knee OA consider their quality of life as lower compared to healthy age-matched individuals. Although several studies have revealed that females with chronic pain feel more depressed than males (Debi et al., 2009). The informed prevalence of radiographic knee OA varies considerably among previous population-based epidemiologic studies. Also, apart from age, sex, obesity and occupational activities, there are only a limited other established risk factors for knee OA (Muraki et al., 2013).

Repetitive mechanical loads and aging are associated cause of OA. The etiological factors have separated into three main sub-groups: sex, anatomy, and body mass recently (Hafez et al., 2014). Above 100 million people worldwide suffer from OA which is revealed by global statistics and this is one of the most common causes of disability. OA is the eighth leading source of disability with the joint most commonly associated with disability being the knee universally (Radha&Gangadhar, 2015).

Only knee OA is estimated to affect nearly250 million people worldwide and importantly, most people with OA are of working age, with more than half being younger than 65 years of age and the incidence of OA is predictable to continue its dramatic increase in the upcoming days (Skou et al., 2018).

Osteoarthritis (OA) is one of the most prevalent and disabling disease. It has significant impact on health and social care resources and it affects 8.75 million people in the UK (Walsh et al., 2017). The incidence of osteoarthritis of the knee is higher among 70 to 74 years old, growing as high as 40%. Besides age; major joint trauma, repetitive stress, and overload of the joint, obesity, female gender, genetic factors, congenital/developmental defects, quadriceps weakness, inflammatory joint disease and several metabolic/endocrine disorders have been identified as a number of other risk factors(Verma&Agarwal, 2013).

Approximately 60 million Americans suffer from knee OA, and this number will rise by 50% throughout the next decade. Pain in the knee during movement triggered by OA is a strong predictor of an increased need for functional assistance and is the second leading cause of disability in the United States. Almost 10%-30% of people diagnosed with OA have severe pain enough to limit function and cause disability, and this percentage is growing day by day. Loss of muscular strength in lower

extremity is associated with increased pain and disability, as well as a more rapid progression of knee OA. The potential culprits underlying OA onset and progression areaberrant biomechanics and abnormal joint forces (Vincent et al., 2012).

Knee Osteoarthritis (OA) is a common problem all over the world. As stated by statistical data from the World Health Organization (WHO), the global age-standardized prevalence rate per 100,000 world standard population in 2000 was 1,770 for males and 2,693 for females. The situation is more predominant among the elderly with up to 40% of people aged over 70 years being affected. In Hong Kong in a study conducted among 38,000 elderly people aged 65 years and above who attended the 18 Elderly Health Centres in Hong Kong for health assessment in 2008 similar findings were stated (Chan and chan, 2011). Knee OA by this characterization was more familiar in women than men, increased with age until a plateau around age 70, and was inversely associated with education level and other markers of socioeconomic status (SES) including regional differences(Nelson, 2017).

Global prevalence of OA was on the increase, affecting both men and women, with women being affected at a higher rate than men. Throughout the last 10 years this trend has sustained (Kruger-Jakins et al., 2016). The occurrence of hip, knee and hand OA is greater in females than men, and the incidence increases nearby menopause. A role of hormonal factors in the development of OA have suspected by several authors (Palazzo et al., 2016).

The incidence of Knee Osteoarthritis in the Asia-Pacific region was 7.50% in China, 5.78% in rural India, 22.00% to 28.00% in urban and 25.00% in the rural population of north Pakistan, and 10.20% in Bangladesh. Epidemiological profile of this disorder in India is not sure but it is predictable that osteoarthritis (OA) is the second most common rheumatological problem and is most frequent joint disease with prevalence of 22% to 39% in India. The frequency of knee Osteoarthritis increases with age, so that about 11% of all women over the age of 60 years have symptoms because of knee OA (Radha&Gangadhar, 2015). The commonly affected joint is knee and now it is expected that 10% of people aged over 60 years' experience knee OA symptoms, resulting in substantial pain and physical dysfunction(Chang et al., 2016).

According to 2010 WHO Global Burden of Disease Study, OA was the 11th leading cause of years lived with disability in the world but only 15th in 1990 and then it was

6th in East Asia and high-income East Pacific countries, 10th in North America, 7th in Eastern Europe but 13th in Western Europe (Palazzo et al., 2016).

In 2017 Nelson reported that a current understanding of the global burden of OA is essential to inform and support ongoing research, and to understand general and population-specific risk factors. Three studies explored the prevalence of OA in Asia. China Health and Retirement Longitudinal Study reported an 8% prevalence of symptomatic knee OA (defined as knee pain with a self-reported physician diagnosis of arthritis). The Fifth Korean National Health and Nutrition Examination Survey found marked differences in symptomatic OA frequency at the hip, knee, and spine by sex: 0.1%, 4.5%, and 5.6% in men and 0.2%, 19%, and 16% in women, respectively. Nine percent of men but nearly 30% of women had at least one joint involved; 11% of men and 23% of women had at least two painful OA joints.

In the United States, a study using the National Health Interview Survey data from 2007 to 8, and incorporating information from the OA Pol model, estimated that around 7% of adults over age 25 (14 million people) had symptomatic knee OA (both pain/aching/ stiffness and self-reported arthritis diagnosis), with about half of these having advanced disease; the greatest burden was noted in non-Hispanic Modifiable risk factors, including BMI, smoking, and uric acid, remained a focus of OA research.People who have progressive symptomatic knee OA experience pain and increasing difficulty with functional activities of daily living. Actually, knee OA tolerates more responsibility than any other disease for disability in walking, stair climbing and housekeeping (Fransen et al., 2015).

One of the most frequently injured joints of lower extremities is knee joint. The anterior cruciate ligament (ACL) rupture can lead to early onset knee OA after 10 to 15 years in 13% of cases. When damaged cartilage, subchondral bone, collateral ligaments and/or menisci is associated with such rupture, the predominance of knee OA is higher, between 21% and 40%. It is suggested that repetitive joint use was associated with the development of OA. Osteoarthritis of knee was more frequently observed in people with occupations that involved in squatting and kneeling, whereas hip OA was related with prolonged lifting and standing, and hand OA was more frequent in people with occupations requiring increased manual dexterity. The morbidity burden of OA is well predictable now(Palazzo et al., 2016).

In 2017 Nelson reported about 41% prevalence of knee OA; those with OA had higher fat mass and lower muscle mass, and there was a linear increase in BMI by KLG. Among women only, there was an association between knee OA and low muscle mass, regardless of body weight, and OA was not infrequent in the younger age groups.

Females have a higher risk of developing knee OA and functional disabilities compared to males and this is not surprising at all. OA is particularly affecting weight bearing joints, such as the knees and hips. Ultimately, pain, stiffness and decreased range of motion lead to decreased functional dependency in daily tasks such as rising from a chair, climbing stairs and walking (Debi et al., 2009).The risk factors of OA can be divided into person-level factors which includes age, gender, obesity and genetics and diet, and joint-level factors including injury and abnormal loading of the joints. Knee mal-alignment is considered as the strongest predictor of progression of knee OA whereas age may be the main risk factor of OA(Palazzo et al., 2016).

Obesity is considered as a risk factor for knee osteoarthritis (OA) and it has been widely acknowledged. Being overweight was the main factor associated with the onset of knee OA. Weight loss can lead to reduce joint compressive forces, normalize joint alignment with attenuating systemic levels of inflammatory cytokines that may help to improve knee OA. Weight loss for adults who are overweight and obese is recommended by existing clinical guidelines, but this recommendation is only established on one meta-analysis published in 2007. Weight loss of >5% within 20 weeks significantly reduced disability in adults with knee OA and obesity which was concluded by the study (Chu et al., 2018). Body mass index (BMI) > 30 kg/m2 is strongly associated with knee OA. Several studies reported that weight loss decreased pain and improved function and decreased low-grade inflammation. The risk of developing knee OA reduced 50% by 5 kg weight reduction and estimated that genetic factors account for 60% of hand and hip OA and 40% of knee OA. In case of disease onset many genes could play a role and this could provide targets for future pharmacological treatments (Palazzo et al., 2016).

There is association to the influence of DM on OA and its therapeutic outcomes suggests that DM may heighten the development and severity of OA and clinical review suggest that DM rises risks associated with joint replacement operation (King

et al., 2015).Including a low level of vitamins D, C and K several dietary factors supposed to increase the development of OA. Still, further studies are needed to better define the association between OA and these dietary factors (Palazzo et al., 2016).

There is various classification of osteoarthritis and often dependent on several factors, there is clear evidence for major risk factors including age, obesity, joint trauma, and heavy work load (Hafez et al., 2014).

The classification and diagnosis of knee OA should be started with a review of the different types of knee OA. OA of the knee usually has been classified by etiology into either idiopathic (primary) or secondary forms. Idiopathic OA of the knee is typically localized but if knee OA involves three or more joint sites then it can be generalized. Knee OA can also be classified by anatomic involvement by the involvement of major joint. Secondary underlying disorders should be considered and excluded before the practitioner makes a clinical diagnosis of primary knee OA. Secondary conditions of the knee should be examined carefully which may develop the risk of knee OA. These conditions consist of trauma, congenital or developmental disorders, calcium pyrophosphate di-hydrate deposition disease, and other bone and joint disorders such as osteonecrosis, rheumatoid arthritis, gouty arthritis, septic arthritis, and Paget disease of the bone (Lespasio et al., 2017).

To develop diagnostic criteria for OA several attempts were previously undertaken and combine patient-reported joint pain in conjunction with consistent radiographic findings. OA usually can be subcategorized into primary (idiopathic) and secondary OA.Even though the etiology of primary OA remains largely undefined, genetic factors, age-related physiological changes, ethnicity, and biomechanical factors likely play a vital role (Kohn et al., 2016).

Post traumatic OA, caused by previous fractures of the distal femur and proximal tibia this is considered as one of all secondary OA, constitutes the plurality of causes but accounts for only 12% of symptomatic OA (Lespasio et al., 2017). Post traumatic, dysplastic, infectious, inflammatory, or biochemical etiologies are the most common causes of secondary OA that are relatively well understood (Kohn et al., 2016).

A scientific analysis of knee OA is supported by the presence of typical symptoms, physical exam findings, laboratory outcomes, and imaging features.No single scientific

characteristic is really sensitive or particular. Typically, the greater capabilities which are present, the more likely the diagnosis (Lespasio et al., 2017).

The health care practitioner should firstly want to know by asking questions directed to chronic health conditions, history of known injury or trauma, previous surgery, medications, occupation, and symptoms (eg, pain level and location, morning stiffness) when diagnosing knee OA. A focused physical examination should be done after the history evaluation. The presence of an effusion, loss of range of motion, and loss of smooth mechanical movement should be examined in cases of each patient. The examination should be assessed for tenderness to palpation of the joint, crepitus (a grating sensation inside the joint) with movement, pain when pressure is placed on the joint, ability to ambulate (with description of any problems with ambulation), along with signs of injury to muscles, tendons, and ligaments surrounding the joint. As well, the examination should describe passive range of motion (assisted) and active (self-directed) range of motion of the affected joint (Lespasio et al., 2017).

As a first-line diagnostic tool for knee OA general practitioners, rheumatologists, and orthopedists typically use knee radiography, which visualizes only bony structures. Community-based studieshave revealed that severe radiographic knee OA is associated with greater pain; moreover, there is a high degree of discordance between clinical and radiographic knee OA. In medical practice, a patient who has equal radiographic grades of OA in both knees typically presents with unequal visual analog pain scale (VAS) pain scores, and sometimes even with pain in only one knee. The main cause for the discrepancy between pain and radiographic structure lesions is maybe that the origin of pain is multifactorial (Wu et al., 2012).

Most commonly used and a cost effective modality for imaging of OA is radiography. It helps to detect OA which is associated with bony features, such as osteophytes, sub-chondral sclerosis, and cysts. Radiography can also able to determine joint space width (JSW), which is a surrogate marker for cartilage thickness and meniscal integrity in knees, but still direct visualization of these articular structures is impossible using radiographic techniques (Crema et al., 2014).

Worsening of tibio-femoral cartilage damage, meniscal damage, and meniscal extrusion are considered as strong predictors of joint space narrowing progression in the same compartment. When compared to meniscal worsening, worsening of

cartilage damage is more commonly seen in joint space narrowing. A firm cumulative consequence on joint space narrowing progression is detected for worsening of more than one MRI feature(Crema et al., 2014).

MRI has played a vital role in understanding the natural history of the disease and in the search for new therapies in osteoarthritis research. Clinical significance of MRI findings associated with osteoarthritic joints is not well defined because of high prevalence in asymptomatic persons but ultrasound may be thought a useful imaging technique for osteoarthritis, especially for small joints of the hand (Hayashi et al., 2017).

There is strong evidence that combinations of high-frequency ultrasound based parameters exhibit potential to distinguish different, particularly very early, degeneration stages of hyaline cartilage. A concurrent estimation of multiple ultrasound based parameters is recommended by variable sensitivities towards different degeneration stages which are diagnostically valuable. In vivo application of the present findings is understandable in both minimally invasive arthroscopic ultrasound and high frequency transcutaneous ultrasound (Mannicke et al., 2014).

There is little effective treatment for osteoarthritis (OA) which is the most common form of arthritis and remains one of the few chronic diseases of elderly(Wright et al., 2011). As there is no disease modifying drugs for OA are available, mainly because of the fact that pathophysiology and relation with subsequent signs and symptoms are not completely understood. OA affects the entire joint including soft tissue structures like menisci and synovium and it is not just a disease of bone and cartilage. Recognizing these peri-articular structures during the course of OA might contribute to knowledge about early diagnosis of OA and prognosis of OA. Through imaging, knowledge about the natural course of the disease might contribute to evaluating the effect of possible disease modifying drugs (Bevers et al., 2014). The first line treatment for knee osteoarthritis (OA), non-pharmacological, non-surgical interventions, primarily exercise therapy and more recently manual therapy are recommended (Abbott et al., 2013).

OA is expensive, having high direct budgets in the form of increased utilization of hospital and medical services and also high indirect costs through lost productivity of individuals from a social view. Still researchers are continuously trying to discover

effective treatments that will help to halt the disease progression and even reverse it (Elbaz et al., 2014).

Recent evidence shows that exercise therapy has beneficial effects on pain and physical function in knee OA, without the common and sometimes serious side effects associated with pharmacological and surgical interventions.Consequentially, exercise therapy is recommended in all clinical guidelines internationally as exercise is considered the basis of conservative management (Chang et al., 2015).

Although pain being recognized as a problem in people living with late-stage OA, the non-pharmacological treatment options which includes education, exercise, and surgery to manage the burden of pain in these individuals are limited (Kruger-Jakins et al., 2016).

Treatments are centered on education and exercise intervention, pharmacological support and weight loss if overweight or obese, with end-stage management being joint replacement which are currently recommended. Exercise should be considered as a basic component of non-pharmacological management in combination with information and education on osteoarthritis (Smith et al., 2019).

Different scientific organizations have been published severalrecommendations and guidelines for the management of osteoarthritis. But, most of them are produced bynational organizations, or are limited to the use of specific interventions like physicaltherapy in many instances, or selected drug classes many OA management recommendationsthrough organizations, controversies remain and are related to the use of some non-pharmacological interventions (e.g. acupuncture, knee braces, heel wedges) and, withinpharmacological treatments, to the pharmacological class of symptomatic slow-acting drugsin osteoarthritis mainly characterized by glucosamine sulfate and chondroitinsulfate, and to some extent by intra-articular hyaluronic acid (Reginster et al., 2015).

Exercise therapy is a special type of physical activity which is designed and prescribed for achieving specific therapeutic goals. Compelling evidence showed that more than 50 randomized controlled trials in knee OA and 10 RCTs in hip OA supports the effectiveness of land-based exercise therapy in decreasing symptoms and impairments. It is found that exercise therapy seems to be at least as effective as non-

steroidal anti-inflammatory drugs and 2 to 3 times more effective than acetaminophen (paracetamol) in reducing pain in knee OA that is compared to the 2 most common pharmacological pain relievers such as analgesic medication. Exercise therapy needs to be taken at an adequate dose and duration to make it effective and ensure optimal and clinically relevant effects on symptoms and impairments (Skou et al., 2018).

To improve muscle strength is one of the main goals of exercise in knee OA. With sufficient dosage Strength training can address muscle weakness by increasing muscle mass and/or recruitment. However, pain must be considered which may be a barrier among patient groups and hence leading to under-dosage of the strength stimulus. By improving lower limb strength internal knee forces may lessen, reduce pain and improve physical function.Increased muscle strength can modify biomechanics, resulting in a decreased joint loading rate or localized stress in the articular cartilage, thereby playing a significant role in delaying initiation and ameliorating progression of knee OA.Quality of life may be enhanced with improved fitness by allowing a greater range of available daily tasks and in that way improving physical function (Fransen et al., 2015).

In 2013Verma and Agarwal stated that, Physical therapy should focus on stretching and strengthening of all muscles that cross the affected joint i.e. quadriceps and hamstrings. Appropriate shoe wear and bracing may also be an option in the early course of disease. The application of superficial heat or cold is very common, often self-initiated, and is considered a component of a “first-line” intervention in the management of knee pain in older adults that the use of superficial heat or cold in conjunction with diathermy, trans-cutaneous electrical nerve stimulation (TENS) or ultrasound led to varying levels of symptom relief and functional improvements in patients with knee OA.

For patients with knee OA the periodic application of superficial heat or cold is a comparatively safe and cost effective treatment that maybe recommended in isolation or in combination with other treatments. Contrast therapy such as intervals of heat and cold application within a treatment session suggests yet another option in the management of many different musculoskeletal conditions, including knee OA. There are some limited studies available to demonstrate if either superficial heat, cold, or contrast therapies are of greater benefit (Denegar et al., 2010).

The use of manual physical therapy strategies, including carefully selected exercises, as part of a comprehensive approach is now evidence based to treat patients with knee OA. This manual physical therapy approach for patients with knee OA helps to reduce pain and stiffness with daily activity, improve function, and reduce the need for medication, injections, and total joint arthroplasty. Manual physical therapy approach involves joint mobilization, manual muscle stretching, and soft tissue mobilization followed by reinforcing exercises. Consistent with some earlier studies on the manual physical therapy approach to treating patients with knee OA, all exercises utilized were planned to have movement improving effects. The strengthening exercises were done by pushing strongly into range of motion limiting structures thus reinforcing clinical mobilizing strategies (Allen et al., 2019).

Specially, a greater benefit had been found for pain with a non-weight bearing quadriceps exercise program than with a weight bearing program(Bennell et al., 2019). After total knee arthroplasty, physiotherapy is an essential component of postoperative management. Postoperative physiotherapy interventions are effective and efficient and it is important as the demand for surgery increases day by day(Henderson et al, 2018).

To improve musculoskeletal function and pain by addressing impaired kinematics of the joint manual therapy is performed, which in OA can be affected by joint capsule contracture, loss of peri-articular flexibility, and increased intra-capsular pressure (Abbott et al., 2013).In a systematic review, it is found that accelerated physiotherapy regimens were effective for reducing acute hospital length of stay where technology-assisted physiotherapy did not show any difference for activity. It is also found that from high quality individual studies pain, activity and range of motion improved with accelerated physiotherapy regimens and activity improved with hydrotherapy (Henderson et al., 2018).

Total knee arthroplasty rehabilitation in the outpatient setting has been conducted by two systematic reviewsinvestigation. The first, a systematic reviewand meta-analysis demonstrated small to moderate aids for activity with physiotherapy interventions involving mostly functional exercises and the second systematic review concluded physiotherapy should comprise strengthening and intensive functional exercises delivered via land-based or aquatic programs (Henderson et al., 2018).

In a study it was found that where total 1262 and 1877 individuals with hip and/or knee osteoarthritis pain were analyzed and from them about 41% who had been recommended to seek physiotherapy or exercise treatment besides subsequently, 83% of those recommended sought these treatments (Smith et al., 2019).

In meta-analyses it was proven that a 5% to 10% weight loss significantly improved pain, self-reported disability and quality of physical life (Chu et al., 2018).

CHAPTER-III METHODOLOGY

3.1. Study Design

Qualitative research is a method of social inquiry that focus on providing in-depth understanding of the social domain by learning about people's circumstances, experiences, perspectives, and stories. Rooted in the field of social sciences, it aims at the need to realize human behavior and the meaning that people attach to their experiences(VanderKaay et al., 2016).

The purposes of qualitative methods are usually to understand the experiences and attitudes of patients, the community or healthcare worker. The aims of these methods are to answer questions about the 'what', 'how' or 'why' of a phenomenon (McCusker&Gunaydin, 2015).

Qualitative research is considered as a powerful way of uncovering complex experiences among OA of the knee patients (Chan &Chan, 2011). Seek to explore and understand phenomenon from the participant perspective in the way that they themselves experience, interpret, and attach meaning to it is one of the foremost strengths of qualitative research(Atieno, 2009).

The study aimed to seek out knee osteoarthritis patient's satisfaction thought, expectation, desires and recommendation. As per, qualitative research has the ability to improve rehabilitation practice by addressing some of its most pervasive concerns such as the subjective and lived experience of disability, interaction between person/environment/disease, clinical reasoning and decision making, practitioner–client interaction, social issues of health and health care delivery, and/or the explanatory mechanisms behind the welfares or harms of intervention (Marterella&Aldrich, 2015).

This approach of qualitative method helped to show the participants actual response of their practical experience which lastly formed the theme of the study by the interpretation and judgment of collected data.

3.2 Study Setting

Musculoskeletal unit of the Centre for the Rehabilitation of the Paralysed (CRP), Savar, Dhaka-1343. CRP is a renewed rehabilitation centre in Bangladesh. The

available patients have come here. For this reason researcher had to collect data within short time to maintain the contrasts of course module time.

3.3. Study population

A group of individual who shared one or more characteristics from which data could be collected and analyzing is known population of a study (Dirscoll, 2007). In this study, the populations wereall knee osteoarthritis patients who came to CRP for receiving physiotherapy services at musculoskeletal unit.

3.4 Sample Size

For this study researcher took a small sample size. So, the researcher could analyze the data from the participant deeply and easily. Researcher took 9 participants as sample.

3.5. Sampling procedure

Purposive sampling procedure was used for the qualitative study. This sampling procedure allows choosing atypical case for the study and this technique is more feasible and less time consuming to obtain relevant information. By using this sampling procedure can make a judgment about sample and able to collect in depth data from the participant according to research need. Purposive sampling strategies are design to enhance the understanding of selected individual or group experience or for developing theories and concept. So, 9 participants as a sample group by using purposive sample were taken to represent the population group for the study.

3.6. Inclusion Criteria

1. Patient having at least 6 session treatment. After six sessions it can be easily understandable the treatment outcome, effectiveness (Skou et al., 2018).
2. Age group 30-70 years. Because most people are affecting in this age range (Skou et al., 2018).
3. Male and female both were the including. Because, this study is no discrimination between male and female (Kruger-Jakins et al., 2016).
4. The participants were diagnosed by qualified doctors, because without confirm diagnosis there may be choose wrong participants (Lespasio et al., 2017).
5. Willingness - Because the participant's willingness were helpful for cooperatingwith them and avoiding bias (Cronstrom et al., 2018).
6. Both literate and illiterate patient were including the study.

3.7. Exclusion Criteria

1. Patient who are not interested to participate in this study.
2. Patient with severe neurological problem, as they might not be able to follow instruction.
3. Patients who have not taking physiotherapy treatment from CRP, because in the study sample must be from CRP.
4. Patients who are just starting to take physiotherapy treatment, because they can't fulfill the study's aim (Skou et al., 2018).
5. Patients with any knee fracture or knee surgery (Lespasio et al., 2017).
6. Patients with any other pathological condition (Kohn et al., 2016).

3.8. Materials of data collection

A semi-structured questionnaire was mainly used to collect the data. All other materials were: audio tape recorder, pen, paper, pencil, information sheet and consent form. Audio tape recorder was used to record the interview. It is a fundamental data-recording strategy in naturalistic inquiry that is primarily used when conducting face-to-face interviews. It is especially important to conduct the open ended interview. In open ended interview, participants provide long detailed answer which is difficult to write verbatim by the researcher. Other materials had been used as support when needed.

3.9. Questionnaire

For data collection a semi-structured questionnaire was used. The questionnaire was formed based upon the related literature, determine of the study title and also pilot study.

3.10. Duration of data collection

Data were collected from May 2019 to July 2019. Each participant provided particular time to collect data. Each questionnaire toke approximately 15-20 minutes to complete.

3.11. Data collection procedure

Data collection methods include in-depth interviews, direct observation, focus groups, written/visual documents, or other representations but in-depth interviews and focus groups are considered the most common of these methods within health care research (Richards, 2014).

Qualitative research highlights depth and quality of data collected. Qualitative researches try to go beyond descriptions to deliver with an in-depth understanding of a phenomenon to a researcher. In qualitative social research methods interview is a vastly used method of collecting data(Anyan, 2013).

The researcher took qualitative data with respect to the subject of the study. All the data were collected by the investigator and there was no any assistant researcher used during data collection. The data was collected in a natural setting. The researcher was collects data through face to face interviews. The interview was recorded using a tape recorder by taking permission from the patients. Audiotape was used to record the all

interviews to discover exact feeling, attitude and emotions of the participants during interviews.

The interview was conducted in Bengali as though they can understand the questions easily. The several materials were organized to successfully complete the interview session. The organized materials were questionnaire, consent form, a tape recorder, paper, pen and a pencil. For a data collection a semi-structured questionnaire were designed to conduct the interviews, during the interview instrument were paper, pen and pencil. Which include close ended questionnaire and open ended questionnaires obtain patient's identification, Socio-demographic information and finding out complicated information. The interview was held at CRP in a quiet place where external variable did not interrupt the interview. The interviews were tape-recorded. In order to ensure the trustworthiness of the recorded data, the tape was replayed for the patient to ascertain that, what was recorded was exactly what he or she said.

3.12. Data analysis

The researcher selected Qualitative method to analyze the data. It facilitated the formation of core data through a systematic method of reduction and analysis. By systematic reduction and analysis of data, the theme of the study was created. Qualitative method usually follows three steps which are coding; categorizing and generating theme and these steps are used to show the result of the study. In a short line, it is told that, texts are coded into established categories to support the generation of ideas (Priest et al., 2002).

The first step of analysis was transcription of data from the audio tape. The transcription was done verbatim and it was written in Bengali. There was some general information on the questionnaire which was also filled up by the researcher and was used for generating the main theme. Each of the transcript were translated into English by 3 different individuals, one is the researcher and another two were such people who were not present in the study setting and don't know about the aim or objectives of the research question. After completing the transcription, researcher verified those to check the consistency of each of the participants' transcripts individually.

Initially the questions of the questionnaire were categorized into different meaning units. Under each of those categories, the interviewed data were coded by line by line analysis of the sentences and phrases. Then, according to the meaning and insights, the categorized data were formed together to make final category. Then the interpretation of those data by progression and reduction process was ended into forming a theme.

3.13. Ethical considerations

Ethics is a moral issue. It tells about the rights. Proper ethical consideration tells about the transparency of any work which is mandatory to avoid conflicts. So to keep the accountability and transparency of the work, the researcher needed to maintain all the ethical considerations from the first phase of the study.

The proposal of the dissertation including methodology wasapproved by IRB and obtained permission from the concerned authority of ethical committee ofBangladesh Health Profession Institute (BHPI).The researcher was followed the guidelines given by ethical review committee according to role and guidelines of World Health Organization (WHO) and Bangladesh Medical Research Council (BMRC).

Then, it came about the data collection procedure. The participants were selected after getting the permission of data collection. The selected participants were informed a detail of the study by the information sheet and gave their permission of participating in the study by the consent form. Confidentialities were maintained at each step during the study was being conducted. The audio tape, identities of participants and other information were not revealed at anywhere except the information needed in the study. All the data was reviewedin strict and maintained confidentially. Participants were also informed and assured that the study was not harmful to them at any chance.

3.14. Informed consent

The researcher had used an information sheet and consent form to take the participant's consent for participating in the study. Researcher let the participant knew details of the study by the information sheet which included the aim, objectives, way of collecting data from the participant and the ethical considerations of the study.

There was also a witness on the every session of data collection with each of the participant. The participant or the witness was asked to read the information sheet, but in case of the participant/witness, who was not educated, researcher read that out to them. There had also been used the consent form containing the consent of the participant that he was participating in the study and giving permission to the researcher to start the data collection session.

3.15. Pilot Study

Before the start of collecting final data, a pilot study was conducted with 3 participants. Carrying out pilot study is a preparation of starting final data collection. It helped to make a plan that how the data collection procedure can be carried out, sorting out the difficulties during questioning, making a basic plan of questioning and if there is needed any modification of the questionnaire. The collected data by the pilot study was firstly transcribed from the audio tape recording. Then the transcription copy was translated into English. The pilot study helped the researcher to make the plan on how the ways can be for collecting data, how a question can be asked on different ways and what can be the probing question to find out the participant's actual response on the event.

CHAPER-IVRESULTS

4.1 Summary of Data Analysis

Table-1: Objective along with finding of categories and themes

Aim of the study	Specific objective	Categories	Themes
Satisfaction of patients after receiving physiotherapy treatment for their knee osteoarthritis from CRP	To identify changes after taking physiotherapy treatment	Changes occur after taking physiotherapy treatment	Pain subsided after taking physiotherapy
	To identify pain intensity according to visual analogue scale before taking physiotherapy	Pain intensity according to visual analogue scale before taking physiotherapy	There was severe pain before taking physiotherapy
	To identify pain intensity according to visual analogue scale after taking physiotherapy	Pain intensity according to visual analogue scale after taking physiotherapy	There was less pain after taking physiotherapy
	To know about patients satisfaction about their functional activities after taking physiotherapy treatment	Satisfaction about their functional activities after taking physiotherapy treatment	Improvements occurred after taking physiotherapy treatment
	To know patients opinion about taking physiotherapy treatment from CRP who have knee pain like theirs.	Opinion about taking physiotherapy treatment from CRP who have knee pain like theirs.	Patients can take physiotherapy treatment from CRP
	To gather patients view about the environment of therapy room	Opinion about the environment of therapy room	The environment is perfect
	To know patients opinion about the duration of treatment time	Opinion about the duration of treatment time	The duration of time is sufficient
	To find out patients	Satisfaction in term of	Highly satisfied in

	satisfaction in term of communication with physiotherapist	communication with physiotherapist	term of communication with physiotherapist
	To gather participants recommendations	Participants recommendations	No specific recommendation
	To know the participants opinion about overall physiotherapy treatment	Opinion about overall physiotherapy treatment	Physiotherapy treatment is highly effective

4.2 Information of the participants

Participant's Socio-demographic information and personal information at a glance:

Table-2: Information of the participants

Participants	Age	Sex	Residential area	Religion	Marital status	Educational status	Occupation	Earning member	Average monthly income
1	62	Female	Urban	Islam	Married	PSC	House wife	husband	15,000
2	53	Female	Urban	Islam	Married	SSC	House wife	Son	30,000-40,000
3	55	Female	Rural	Islam	Married	Illiterate	House wife	herself	15,000
4	52	Male	Rural	Islam	Married	PSC	Immigrant	Himself	30,000-40,000
5	60	Male	Rural	Islam	Married	PSC	Businessman	Himself	30,000
6	60	Female	Urban	Hinduism	Married	PSC	House wife	2 Sons	50,000
7	53	Female	Rural	Islam	Married	PSC	Service holder	Herself	10,000
8	65	Female	Urban	Islam	Married	Class 8	House wife	Husband and son	30,000
9	30	Female	Rural	Islam	Married	Class 8	House wife	Husband	20,000

In the study the number of participants was nine with knee osteoarthritis. Among the participants there were seven female and two male participants. The age range was minimum thirty years and the maximum age was sixty five years. From them five participants lived in rural area and four participants lived in urban area. The religion

of majority participants were Islam just one participant was Hindu. All of the participants were married. Among the nine participants, one participant was illiterate, five of them were in primary level, two of them were in class eight and one was in secondary level. From the nineparticipants, six participants were housewife, one of them was service holder, one participant was immigrant and another one was businessman. Seven participants had one earning member and two participants had two earning members in their family. Minimum average monthly income was ten thousand taka and the maximum monthly income was fifty thousand taka.

In below each table describes the interview findings and is described withcoding. The tick was given only for those columns in accordance with participant'sresponse. The description is according to category and coding. Here 'P' was used forcoding to participants. The subscript number 1,2,3…10 used to mention the number ofparticipants.

Table-3: Code name of the participants

Participants number	Code name
1st participant	P1
2nd participant	P2
3rd participant	P3
4th participant	P4
5th participant	P5
6th participant	P6
7th participant	P7
8th participant	P8
9th participant	P9

Summary of theme that emerged from data analysis

Theme 1

Pain subsided after taking physiotherapy

(Emerged from category-1)

Category 1: Changes occurred after taking physiotherapy treatment

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response
Pain has decreased after treatment	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Pain has increased after treatment										
After treatment pain is same as before										
Total response										9

Table-4: Coding of changes that occurred after taking physiotherapy treatment

Among the nine participants, all were agreed that changes occurred after taking physiotherapy treatment for their knee osteoarthritis. Before taking physiotherapy everybody's knee pain affected their daily activities. So after treatment their pain has decreased.

Theme- 2

There was severe pain before taking physiotherapy

(Emerged from category-2)

Category-2: Pain intensity before taking physiotherapy

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response
Mild pain										
Moderate pain										
Worst possible pain	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Total response										9

Table-5: Codingof pain intensity before taking physiotherapy

Each and every patient said that they had worst possible pain before taking physiotherapy treatment.

Theme- 3

There was less pain after taking physiotherapy

(Emerged from category-3)

Category-3: Pain intensity after taking physiotherapy

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response
No pain				✓						1
Mild pain										
Moderate pain	✓	✓	✓		✓	✓	✓	✓	✓	8
Worst possible pain										
Total response										9

Table-6: Codingof pain intensity after taking physiotherapy

Majority of the participants said that, they have moderate pain after taking physiotherapy and most importantly one participant said that, he has no pain at all.

Theme- 4

Improvements occurred after taking physiotherapy treatment

(Emerged from category-4)

Category-4: Satisfaction about their functional activities after taking physiotherapy treatment

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response (Total)
After taking physiotherapy, feel pain in knee same as before during sit to stand										
After taking physiotherapy, feel less pain in knee during sit to stand	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
After taking physiotherapy, feel pain in knee same as before during walking										
After taking physiotherapy, feel less pain in knee during walking	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
After taking physiotherapy, feel pain in knee same as before during stair climbing										
After taking physiotherapy, feel less pain in knee during stair climbing	✓	✓	✓	✓	✓	✓	✓	✓	✓	9

Table-7: Coding of satisfaction about their functional activities after taking physiotherapy treatment

Among all participants, all of them stated that, they feel less pain during sit to stand activity, during walking and stairs climbing which was described as daily functional activities after taking physiotherapy treatment.

Theme- 5

Patients can take physiotherapy treatment from CRP

(Emerged from category-5)

Category-5: Opinion about taking physiotherapy treatment from CRP who have knee pain like theirs

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response
Can take physiotherapy	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Can't take physiotherapy										
Total response										9

Table-8: Coding of opinion about taking physiotherapy treatment from CRP who have knee pain like theirs

Entire participants agreed that, those who have knee pain can take physiotherapy from CRP.

Theme- 6

The environment is perfect

(Emerged from category-6)

Category-6: Opinion about the environment of therapy room

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response (Total)
Environment is good	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Neat and clean					✓	✓	✓			3
Room is beautiful			✓			✓				2
Comfortable				✓						1
No bad side			✓						✓	2

Table-9: Coding ofopinion about the environment of therapy room

All participants mentioned that the environment is good enough and three participants added that he environment is neat and clean. Two participants said that the therapy room is beautiful as well as it has no bad side. Therapy room seems comfortable to one participant.

Theme- 7

The duration of time is sufficient

(Emerged from category-7)

Category-7: Opinion about the duration of treatment time

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response
Treatment time is Enough	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Treatment time is not enough										
Total response										9

Table-10: Coding of opinion about the duration of treatment time

Duration of treatment time seemed to be enough to each and every participants.

Theme- 8

Highly satisfied with professional behavior of physiotherapist

(Emerged from category-8)

Category-8: Patients view about professional behavior of physiotherapist

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response
Well behaved	✓		✓	✓	✓	✓	✓	✓	✓	8
Not well behaved										
Behave politely	✓									1
Behave satisfactorily		✓								1

Table-11: Coding ofpatients view about professional behavior of physiotherapist

Almost all participants were satisfied with the professional behavior of the physiotherapist. They agreed that, the physiotherapists are well behaved. One participant said that, they behave politely and satisfactorily.

Theme- 9

Recommendation to give facilities to the older patient

(Emerged from category-9)

Category-9: Participants recommendations

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response
No recommendation	✓	✓	✓	✓	✓	✓	✓		✓	8
Give facilities to older peoples								✓		
Total response										1

Table-12: Coding ofparticipants recommendations

Majority of the participants had no recommendation but only one participant said that, it will be better to give facility to the older people.

Theme- 10

Physiotherapy treatment is highly effective

(Emerged from category-10)

Category-10: Opinion about overall physiotherapy treatment

Codes	P1	P2	P3	P4	P5	P6	P7	P8	P9	Response
Physiotherapy is effective and beneficial	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Physiotherapy is not effective and harmful										
Total response										9

Table-13: Coding ofopinion about overall physiotherapy treatment

Among the nine participants, all of them thought that physiotherapy is highly effective as well as beneficial to all.

CHAPTER – V DISCUSSION

In this chapter the results of the study are discussedin relation to the research questions and objectives of the study. The discussion focuseson magnitudes of patient satisfaction with physiotherapy treatment that they received fortheir knee

osteoarthritis from CRP. The analysis and discussion is about to identify published papers and determining therelevance with the acquired data.

A qualitative study designwas used to conduct the study. Nine patients with their knee osteoarthritis were recruited inthis study. The datawere collected by using a semi-structured questionnaire form and coded by tenthemes; finally the coded data are analyzed and presented qualitative analysis.The description of the theme according to itscategory and coding is given below. Each table describes the interview findings. Underthe different categories, different opinion is different codes. Following themes have been emerged on the basis of data analysis.

Theme 1: Pain subsided after taking physiotherapy

Among all the participants, all of them said that changes occurred after taking physiotherapy treatment. Pain had subsided a lot and there was improvement in their activities of daily living.

It was found that a single blind RCT study with a 12-months follow-up of total 56 patients with knee OA were assigned into 2 random groups, where the patients in exercise group received exercise for knee muscles in combination with non-steroid anti-inflammatory drugs (NSAIDs) and 10 sessions acupuncture and physiotherapy modalities and the non-exercise group received similar treatments except exercise program.The patients with knee OA in exercise group had significant improvement in pain, disability, walking, stair climbing, and sit up speed after treatment at first and second follow-up when compared with their initial status and when compared with non-exercise group was demonstrated by the results (Nejati e al., 2015).

One of the participants said that,

"The pain has subsided. Before there was a lot of irritation, still it happens but not as before."

Hunt et al showed in 2013 that differenttypes of exerciseshave consistently shown positive effects on pain and physical functioning in those with knee OA.

Another patient added that,

"It has changed more than before. I would have been difficult to walk before, I couldn't walk, but now I can walk."

A review demonstrated by Hunt et al in 2013 that, intervention integrating exercise and pain coping skills training components for individuals with knee OA can be provided by trained physiotherapists and can result in improvements in pain, function, self-efficacy, and overall arthritis impact. Two of the participants agreed that, half of their pain was abolished and they are much better now.

One said,

"The pain was reduced by half as much as before."

This statement proves higher satisfaction about taking physiotherapy treatment for their knee osteoarthritis. As pain is considered as one of the most common and important clinical features of knee osteoarthritis so it is proved that physiotherapy is effective for knee osteoarthritis.

Another one said that,

"At present I am 50 percent better."

So, almost all of the participants were agreed that there was a lot of changes occurred after taking physiotherapy treatment. They didn't feel pain as much as before. Therefore we can say that pain has subsided after taking physiotherapy treatment from CRP.

Theme- 2: There was severe pain before taking physiotherapy

OA results in difficulty performing daily activities and a lack of physical activity due to pain.Nowadays, pain was cited as the main complaint of all patients. The assessment of pain is individual and subjective as the individual is the authority on his or her own experience of pain. The evaluation was done by using the visual analog scale to identify the intensity and severity of the pain. Physical exercise therapy is considered as the most appropriate non-surgical treatment for osteoarthritis (OA) of the knee. Physiotherapy decreases pain and improves function, muscle strength, range of movement (ROM), joint stability and aerobic conditioning (Carvalho et al., 2010).

Among all the participants, each and every participant was faced worst possible pain before taking physiotherapy treatment. Before taking physiotherapy, their pain strongly affects their everyday life and their functional activities. Even some people couldn't move due to their pain.

One of the patients said that,

"In between one to ten, to me it seemed that my pain was in seven or in eight."

Another participant said that,

"I couldn't sit before butt now I can sit and even I can move. There is no pain. But my pain was in ten before."

This statement shows us that pain is one of the main problems. For that reason participants could not move sometimes. Pain was the strong barrier to carry on their day to day life.

Joint pain is the most common symptom of osteoarthritis. The pain have a tendency to worsen with activity, especially following a period of rest which is known as the gelling phenomenon (Sinusas, 2012). Other one added that,

"This was not fixed but my pain was in seven or eight or in ten before."

Another six participants also stated that there was worst possible pain which was as like as ten. One said that,

"Before taking physiotherapy my pain was in ten."

One participant said that,

"Suppose my pain was in ten."

About 80% of patients with OA have persistent pain on a regular basis that limits their daily activities (Kon et al., 2012).

Other one said that,

"Before exercise, there was pain then my pain was in ten."

So most of the participants said they had unbearable pain before taking physiotherapy treatment which was the main obstacle.

Theme- 3: There was less pain after taking physiotherapy

Physical exercises at home, along with monthly reassessment by a physiotherapist, helps to achieve significant improvement in pain, ROM knee flexion, muscle strength, and functional capacity (Carvalho et al., 2010).

After taking physiotherapy most of the participants stated that they had moderate pain. One patient very happily said that he had no pain at all after taking physiotherapy treatment which indicates the greater significance of physiotherapy treatment.

According to one patient, she said that,

"Probably my pain seems like as five now."

A total of 80 patients with symptomatic knee OA will be randomly assigned to the experiment group where Quadriceps-plus-hip-abductor-strengthening exercises were given and in the control group Quadriceps-strengthening exercise is given. Exactly, participants in the experiment group will complete 4 exercises to train the quadriceps and hip abductor twice a day for 6 weeks at home, while those in the control group will only perform 2 exercises to strengthen the quadriceps and lastly the study findings will provide more evidence for the effects of hip abductor strengthening on relieving pain and improving function in knee OA patients (Xie et al., 2018).

Another patient added that,

After taking physiotherapy, by the grace of Allah, I think that my pain is in five because I can move now. Have to follow the rules otherwise it becomes difficult.

When patients with knee OA submitted to exercises combined with manual therapy, they experienced significant improvements in clinical status as well as pain, stiffness, and function (Carvalho et al., 2010).

Other one said that,

"After taking physiotherapy, I suppose my pain is as like five now."

Two participants said that,

"Now my pain is in five."

A sample of 20 individuals with unilateral knee OA where there were 5 men and 15 women, aged 64 ± 9 years, were tested. In that study it was found that there was a significant effect of limb on the VAS score between pre and post-exercise conditions (Goddard & Dickey, 2019).

The patient, who said that he had no pain, he was very satisfied with physiotherapy. According to his statement,

"There is absolutely no pain at all. Pain seems to be zero now."

This statement shows greater importance of physiotherapy treatment. Where there was worst possible pain before taking physiotherapy, it comes to level zero after taking physiotherapy treatment and it is a great achievement for any physiotherapy professional. So this is very easily understood that physiotherapy is one of best treatment option for the patients of knee osteoarthritis.

Theme- 4: Improvements occurred after taking physiotherapy treatment

According to transcriptsamong the 9 participants almost all participants were agreed that they had improvement after taking physiotherapy. They can move easily now. During sit to stand, during walking and climbing stairs they felt less pain. The maximum participants got the improvement in their functional activities, which were main things for thesatisfaction. Therefore the impact of physiotherapy on the quality of life of the patient seems to be good.

A study was conducted with 80 patients with knee osteoarthritis where the patients were randomized into two groups. The first group was given the home exercise brochure by the orthopedist, while the second group did home exercises under the guidance of the physiotherapist and in that study statistically significant improvements were found in the post-treatment ROM, VAS, quadriceps and hamstring muscles strength. Home exercises taught by a physiotherapist were more useful for patients with knee osteoarthritis which is proved by the study (Yilmaz et al., 2019).

One participant said that,

"It hurts less. After taking therapy it hurts less now"

It is found that exercises have beneficial effects in terms of reducing pain and improving physical function for patients with knee OA. All types of strengthening exercises like isometric, isotonic, and isokinetic as well as the different forms of aerobic activities which includes walking, jogging have the same important impact to improve quality of life (Kon et al., 2012).

Another patient said that,

"Before there was intense pain but it lessens now. Due to taking therapy pain is less now."

One participant thought that he had less pain due to taking medicine and taking therapy as well as maintaining the system. According to her statement,

"The pain is less than before. But the pain doesn't end all. The pain subsides because it seems to take medicine and maintaining the system here. I am taking therapy and doing what they are saying."

Another one described no pain during sit to stand activity. He said that,

"There is no pain right now and there is no problem."

One participant told that,

"After taking therapy for few days, the pain subsides. The pain reduces after taking regular therapy."

In the year of 2019,Verhagen et al showed in secondary analyses of a meta-analysis of studies on patients with knee osteoarthritis, exercise is effective and clinically worthwhile in reducing pain immediately post treatment compared to no or minimal interventions in patients with knee OA.

Another patient said that,

"Before there was intense pain but it lessens now. Due to taking therapy the pain is less now."

A patient described her knee pain as biting like sensation which was reduced after taking physiotherapy. She said that,

"Before there is biting like feeling inside the knee. It hurts but now it hurts less. And it seems to reduce pain after taking physiotherapy."

Some patients could not walk before taking physiotherapy due to their knee pain. They thought that after taking physiotherapy and due to maintain the rules and regulation and taking medicine as well they had less knee pain. One participant told that,

The pain is less than half. It doesn't hurt during walking. Before I could not walk more than two step. Now the pain has subsided and I can walk."

Another one said that,

"Now pain is less because I am continuing medicine and taking therapy. Now I am abiding by the rules, so the pain is less."

Local cryotherapy known as an analgesic resource was always used in conjunction with compression and elevation of the limb for approximately 20 minutes after the exercises or when there was pain in the knee. Cryotherapy is easy to apply at home. When there is pain, inflammation, and muscular spasms, it is prescribed because it acts directly on the nerve endings, which reduces the conductibility of the impulse, causes the threshold of excitation of the nerve cells to increase, promotes a decline in local cell metabolism, promotes lower oxygen consumption, and prevents lesions, by secondary hypoxia (Carvalho et al., 2010). One participant got benefit from ice application. He said that,

"I feel less pain while walking. After applying ice swelling is reduced then the pain subsides."

In case of stair climbing still patients faced pain but it hurt less than before. One said that,

"I could not climb stairs before. It was difficult to get up in the stairs. Now it hurts but much less."

Another patient told that,

"It hurts but less than before. I think the pain is lessens after taking therapy."

One participant told that he didn't feel any pain during stair climbing. He said,

"There is no pain now. It is better now. There's been a lot of trouble before."

Another one stated that,

It hurts when climbing stairs but the pain is less than before. I feel comfortable now. Yet it has hurt when I am climbing stairs and riding rickshaw after taking therapy but yet I can."

Theme- 5: Patients can take physiotherapy treatment from CRP

Almost all patients according to transcriptsthought that anyone can take physiotherapy from CRP who has knee pain like theirs because they are improving day by day. They are highly motivated after taking physiotherapy.

In the year of 2017 of current centuryNicolson et al in a systematic review and meta-analysis of 3899 studies provide quality evidence that booster sessions with a physiotherapist assisted people with hip/knee osteoarthritis to better adhere to therapeutic exercise.

One participant already had spoken to others about it. She said that,

"Already I have told many people that I recover from here. Here therapy seems good to me. If they will take right treatment and abide by the rules and regulation then the pain will be less."

Patients and general practitioners seemed generally passive with regards to knee osteoarthritis where physiotherapists being more positive regarding long-term improvement of knee osteoarthritis (Poitras et al., 2010).

Another patient said that,

"Hopefully it will be good if they take physiotherapy. Yes they can take 100%. If they take, hopefully they will live a healthy life like me."

In a randomized, controlled clinical trial was performed with thirty patientswith moderate-to-severe symptomatic knee OA were randomly assigned to one of two groups where patients in Maitland group received Maitland manual therapy twice a week beside conservative therapy, in the meantime patients in Control group were treated with conservative therapy, included balneotherapy and water-based gymnastic every day, land-based physical therapy and transcutaneous electrical nerve stimulation (TENS) therapy three times per week.In that research it was found that physical therapeutic intervention program has beneficial effect on patients with knee OA. Furthermore, it was also found that Maitland manual therapy has significantly better effect on most of the subjective and objective status of the patients with knee OA (Pozsgai et al., 2018).

Another one stated that,

"I give advice to others that go there, maintain the rules and regulations and then see you will be fine."

Every patient should be encouraged to carry out and maintain their daily activities. An exercise program supervised by a health professional can be used for patients wanting support. Pain can be caused by exercises temporarily but do not worsen the arthritic condition (Poitras et al., 2010).

One participant said if she will be better then she will tell others people about it According to her statement,

"If I will be better then I will suggest others that, I took therapy from here and now I am fine."

One participant said he will promote it in social media like Facebook. He told that,

"Of course I will promote it. Currently I will give it to Facebook. I am fairly good now Insha'Allah."

Another participant thought that after taking therapy people can walk and their pain will be decreased. She said that,

"If they have pain like me, they can take therapy. If they take then they will walk and the pain will be decreased."

It is found encouraging and motivating that patient generally agreed on the importance to maintain activities despite knee OA, in order to accomplish activities of daily living and participate in society as normally as possible (Poitras et al., 2010).

So we can say that each and every patient was highly motivated about the effectiveness of physiotherapy. Almost all patients thought that people who has knee pain like theirs should take physiotherapy as soon as possible. If they take therapy it will be better for them and it will help them to live a healthy life.

Theme- 6: The environment is perfect

Environmental factors which include clinic location, parking, and time spent waiting for therapy, have associations with quality and satisfaction in rehabilitation settings especially when compared with interpersonal aspects of treatment and outcomes and some elements of the physical environment such as cleaning, privacy have stronger associations (Medina-Mirapeix et al., 2013).

Among the total 9 participants almost all participants said that the environment seems good to them and three of them are agreed about the neat and cleanliness of the environment. One participant said that,

"I feel convenient. It is good to me. Environment is good here. The rooms are clean and beautiful."

Another one added that,

"The environment is fine. Cleanliness is good."

The study found that cleanliness of the treatment areas had a significant associationwith patient satisfaction. The safe place is important during patient treatment. If theplace is not quite or safe then the treatment may be hampered and the patient may feelcomfortable and also patient may be de motivated. So, it is very essential to have neatand clean, safe and quiet environment for providing better service.

It is known that the concept of patient satisfaction is related to a patient's direct and indirect experiences with the healthcare system and interaction with healthcare providers, particularly communication (Berkowitz, 2016).

Other one stated that,

"Certainly comfortable. Very good behavior. Therapy room is also good."

One participant told that,

"It's good. The environment is beautiful. There is no bad side. They don't behave badly ever."

In marketing and environmental psychology environment is being widely conceptualized. This conceptualization identifies that the environmental elements influencing service quality perceptions can be included by three groups which are ambient conditions, facility design, and social factors (Medina-Mirapeix et al., 2013).

One participant talked about the hotness of the environment but the overall environment of the therapy room seems good to her. She said that,

"I feel convenient but if the fan is close more, then the patients feel less hot. The environment seems good to me."

Physical environment is commonly supposed to a domain that may affect patients' perceptions of quality of care, satisfaction with care and health outcomes (Medina-Mirapeix et al., 2013).

If the treatment place is peaceful and quiet thepatient may feel comfortable and also patient may be motivated to take physiotherapy.So these are very important to achieve patient satisfaction.Lastly, observing the participants opinion, among nine participants most were described theenvironment as very good and they like the environment.And all had the positive opinion toward environment.

Theme- 7: The duration of time is sufficient

This theme describes the opinion of the patient about duration of treatment which is given by therapist. The researcher asked the same question to the participants toknow their valuable opinion. Among the nine participants almost every participants were satisfied with the duration of treatment.

One told that,

"I am satisfied. They serve good mash Allah. Don't be dissatisfied because they work for us."

This statement represented that patients were satisfied with the time that thephysiotherapist spent with them during the treatment. In this study there wassignificant association between time factor and patient satisfaction.

It is found that positive patient-therapist interactions in physical therapy settings are linked with reduced pain, reduced disability, and higher treatment satisfaction (O'Keeffe et al., 2016).

Another participant added that,

"As much as I get in this period, I feel good by the grace of Allah."

One said that,

"Yes I am satisfied because the pain subsides. So I am satisfied."

One participant stated that,

"I am satisfied. I have preached in many places because there is good treatment available."

The time of treatment is important to know about patient satisfaction. Most of thepatients are agreed with treatment time at CRP. One of the participants told that,

"Yes definitely I have to be satisfied because if you go to any doctor there is serial. Everywhere there is serial. So why would I be dissatisfied."

One participant said thought that if the treatment time would be little more then it will be better for them but still she was satisfied with the treatment time. According to her statement,

"I think it would have been better if it is little more. Still I am satisfied. It is such a continuum."

Treatment time is very necessary for better treatment procedure and also patient satisfaction. If there is not sufficient time to treat patient it will not bring better outcome for the patient. So this is one of the major factors to know the patient's satisfaction.

Theme- 8: **Highly satisfied with professional behavior of physiotherapist**

The researcher tried to find out the physiotherapist professional attitude because through this theparticipants perspective towards the service is strongly influenced. All of participants weresatisfied with the professional behavior of their physiotherapist. Here most of the participants agreed that the physiotherapist were well behaved and they were satisfied with their behavior. Patient satisfaction with physiotherapy care is influenced by an interaction between thetherapist and the patient (Kidd et al., 2011).

One said that,

"They are well behaved. They treat me well and I treat them well. I don't treat anyone badly and neither do they."

This study result indicated that, the therapist should be sensitive and responsive for ensuringparticipation of patient (Lindberg et al., 2013)

Another one said that,

"They behave well and beautifully."

Another one told that,

"Of course I am satisfied. They are very good."

One participant added that physiotherapist was talked with them with a smiling face and she was satisfied with the behavior of the physiotherapist. She said that,

"Yes obviously I am satisfied. They are very nice and talk with a smiling face. When the doctor behaves satisfactorily, then the patients get better 5o percent."

Another one was said physiotherapists were behaved politely. This theme represent that participants express physiotherapist's entire attitude is good,polite and also communicative and cooperative. She said that,

"She behaves very politely. She is giving the therapy as the way I speak."

We can see that the physiotherapisthas a very positive professional behavior than other professionals. Spontaneous behavior, Autonomy, Personal problem orientation, Program clarityand Staff attitude to expressed feelings were also correlated with patient satisfaction. Quality of professional interaction between the care providers and the patients inmatters relating to their treatment and being treated with respect has a strong bearingtowards the patient satisfaction. These findings indicate that there is an associationbetween treating the patient with respect and their satisfaction with the service.

Theme- 9: **Recommendation to give facilities to the older patient**

Every patient has the right to tell about their recommendation about the services. A patient satisfactionstudy needs to measure the factors or dimensions of care that patients feel arenecessary to evaluate or comment on.

To consider the patient's point of view and opinions was important which was mentioned by Physical therapists. This consideration helped to encourage patients to engage in the treatment process and interact with their therapist. It also found that patient's opinions were important to the therapist, which encouraged a better interaction between the therapist and patient and helped form a stronger bond (O'Keeffe et al., 2016).

Here majority of the participants had no recommendation. According to their statement one said,

'No, I have no recommendation."

Another said that,

'No, everything is okay. Nothing seems inconvenient to me."

Another one told,

"No, I have no such recommendation"

Other one said that,

"No, all right here. I have no recommendation."

Only one participant said about to give facility to the older people like her. She said that,

"Those who are not moving alone like me, if they are helped in reception when taking therapy time and consulting with doctors then I think it will be better for us."

Lastly we can see that only one participant had one recommendation otherwise rest of the participants had no recommendation.

Theme- 10: **Physiotherapy treatment is highly effective**

Among the all nine participants, all of them according to transcriptswere agreed about the effectiveness and beneficial effects of the physiotherapy treatment. They are highly motivated to take physiotherapy treatment from CRP. Maximum participants got improvement after taking physiotherapy which helped them to lead a better and quality full life.

In a Double‐Blinded Two‐Group Pretest–Posttest Design to find out the effect of combined proprioceptive exercises with conventional physiotherapy in Patient with knee osteoarthritis which was conducted with total of 40 female patients with knee osteoarthritis were recruited for the study and were divided into two groups as follows: Group A (conventional group) and Group B (experimental group). Group B in addition to the conventional treatment received proprioceptive exercises where both the groups were instructed to perform exercises for 5 days in a week for 3 months.Thestudy resolved that 3 months duration of combining proprioceptive exercises with conventional physiotherapy is more effective than conventional physiotherapy alone inpatients with knee osteoarthritis (Kirthika et al., 2018).

Exercise is considered as an effective conservative method. Physical therapies are developing as viable treatment options, and novel biological methods. Strength training and aerobic training, range of motion exercises and stretching have been

suggested because of their benefits in modulating pain, increasing ROM, reducing soft tissue inflammation, inducing relaxation, improving repair, extensibility, or stability of contractile and non-contractile tissues, facilitating movement, and improving function (Kon et al., 2012).

According to participant statement, one participant said that,

"Physiotherapy of CRP is very fond to me and it seems good to me. I am benefited myself and for that reason I come here and tell others to come here."

It is found in secondary analyses from a randomized controlled trial that one hundred and fifty-nine patients diagnosed with knee OA who received exercise therapy as intervention. Result showed that improved muscle strength was significantly associated with reductions innumeric rating scalepainand physical function and the upper leg muscle strengthening is one of the mechanisms underlying the beneficial effects of exercise therapy in patients with knee OA (Knoop et al., 2015).

Another one stated that,

'Physiotherapy is beneficial if given regularly. Sometimes I don't come in tie so I have to suffer for it."

Sixty participants of 37 men and 23 women with moderate knee osteoarthritis were classified into three groups according to pain intensity: mild, moderate, and severe pain groups where all groups underwent a standard set of pulsed electromagnetic field, ultrasound, stretching exercises, and strengthening exercises.After a 4-week rehabilitation program it was found that all groups showed significant differences in pain intensity, knee range of motion, isometric quadriceps strength, and knee function as well as the score change in moderate pain group was significantly better than those in mild and severe pain groups(Abdel-aziem et al., 2018).

One said that,

"It looks good. Here they are giving manual therapy and directly. They are aware of this. So they know in which area in which area therapy has to be given and which is better for us. That's why it is good to me."

Another one told that,

"The physiotherapy service looks good. I am benefiting. After I took medicine I found it gets worse. So I don't take any kind of medicine now."

Patients who has moderate knee OA with different grades of pain can be benefited from a physiotherapy rehabilitation program, which was found to be highly effective in patients with moderate pain, although this effect might be reduced in patients with severe pain (Abdel-aziem et al., 2018).

One said that,

"It has great benefit. I have taken treatment in many places and consulted with many orthopedic doctors but there was no benefit. Even I had seen many doctors in other states but nothing worked. But after two and a half months of treatment here, I am much better now. No need to take any medication."

From the last two statements we can say that physiotherapy is more beneficial and effective then medications and other treatments for knee OA. Patients are too much motivated to take physiotherapy treatment for their knee osteoarthritis. It shows greater satisfaction of patients towards physiotherapy treatment. So this theme represents that, effectiveness of physiotherapy care at CRP is anacceptable standard to treat knee osteoarthritis.

Limitations

In this study I tried my level best to conduct the research in systemic way. As the researcher was a 4th year B.Sc. in physiotherapy student and this was her first researchproject so she had limited skill with techniques and strategies in terms of thepractical aspects of research to conduct. For that reason there were some errors or faults which overlooked by the honorable supervisor and the teachers. Though there are many strong point of this study but there are also some limitations which can be easily overcome by others. Impacts of limited time and resources have a vital role on this study.Another limitation was the latest and recent literatures especially the recently issued journals were not accessible. As no research has been done before on this topic for that reason therewas little evidence to support the result of this research project in the context of Bangladesh.

CHAPTER-VI CONCLUSION AND RECOMMENDATION

6.1. Conclusion

Osteoarthritis is considered as one of the ten most disabling disease in adults. Though it is not a curable disease, but regular physical activity plays a vital role in maintaining thephysical health as well as mental health. If the patient receive physiotherapy regularly and maintaintherapeutic activities at their home then 80% symptoms will be subsided which is proved. In order to determine theeffects of physiotherapy on quality of life, it is essential to identify the impact of their knee pain of the patients before they received physiotherapy treatment.The main objective of this study was to identify satisfaction of patients after receiving physiotherapy treatment for their knee osteoarthritis from CRP. To identify patient's satisfaction, there are many interrelated factors which influence the study strongly such as socio demographic condition of the patients, patient-therapist interaction, treatment time, environment of the place from where they receive physiotherapy and so on.

It has found that almost all participants are highly satisfied after receiving physiotherapy treatment for their knee osteoarthritis. Some of them said physiotherapy is the best treatment option for knee osteoarthritis. Nearly all patients told that physiotherapy is the most effective and beneficial treatment. This studyshowed that physiotherapy is effective for the patient with osteoarthritis of knee joint.If general people are conscious and aware about the effectiveness of physiotherapy then more peoplewill come to receive physiotherapy in the earlier stage of their disease.

6.2. Recommendation

Knee osteoarthritis patients are expected to be a forthcoming problem like other countries, for Bangladesh. That's why, it is essential to develop evidence based research of physiotherapy practice in musculoskeletal area. As there are few studies on musculoskeletal area in the kneeregion for that reason these cannot cover all aspect of this massive area. So, it is recommended that thefollowing generation of physiotherapy members should conduct research this area which may involve use of large sample size and participants form different institute ofBangladesh where physiotherapy service are available. As the duration of the study was not so long, so in future time should be increased forconducting the study. As per the patient'ssatisfaction was, the outcome of physiotherapy treatment is effective and beneficial so it is recommended to do further research on patient's satisfactiontowards evidence based physiotherapy treatment which will be received from others rehabilitation centers for their knee osteoarthritis.

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Appendix 1

Permission Letter

April 25, 2019

The Head of the Department

Department of Physiotherapy

Bangladesh Health Professions Institute (BHPI)

CRP, Chapain, Savar, Dhaka.

Through: The Head of the Department, Department of Physiotherapy, BHPI.

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

Sir,

With due respect I state that I am a 4th year student of B. Sc. in Physiotherapy Department of BHPI, the academic Institute of CRP. I am sincerely seeking permission to collect data for my research project as the partial fulfillment of the requirement for the degree of B.Sc. in Physiotherapy. The title of my research project is "**Satisfaction of patients after receiving physiotherapy treatment for their knee osteoarthritis from CRP**" under the supervision of Ehsanur Rahman, Assistant Professor of Physiotherapy Department, BHPI. In order to accomplish this study, I want to collect necessary data from the patients attending in out-patient department of Musculoskeletal Unit in CRP, Savar. I would like to assure you that anything of my research project will not be harmful for the participants.

So, I therefore, pray and hope that you would be kind enough to give me the permission for data collection and your permission will help me to conduct a successful study as a part of my course.

Sincerely Yours

Tamanna Zahan Tithee

Tamanna Zahan Tithee

4th Year, B. Sc. in Physiotherapy,

Department of Physiotherapy

Roll no: 01

Session: 2014-15

Bangladesh Health Professions Institute (BHPI),

CRP, Chapain, Savar, Dhaka.

Forwarded
25/04/19

Forwarded & Recommended
25.04.19
Prof. Md. Obaidul Haque
Head, Department of Physiotherapy
BHPI, CRP, Savar, Dhaka-1343

Approved
25/04/19
Mohammad Anwar Hossain
Associate Professor & Head
Physiotherapy Dept., CRP
CRP-Chapain, Savar, Dhaka-1343

Rumana
FARJANA SHARMIN
Consultant and OPD Incharge
Physiotherapy Department
CRP, Savar, Dhaka

Appendix 2

BANGLADESH HEALTH PROFESSIONS INSTITUTE

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

Ref:

Date: 18/09/2019.

CRP-BHPI/IRB/09/19/1339

To
Tamanna Zahan Tithee
B.Sc. in Physiotherapy
Session: 2014-15, Student ID:l l2l 40232
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal **"Satisfaction of patients after receiving physiotherapy treatment for their knee osteoarthritis from Centre for the Rehabilitation of the Paralysed"** by ethics committee.

Dear Tamanna Zahan Tithee,

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 and Bangla version)
3	Information sheet& consent form.

The study involves use of a questionnaire to explore satisfaction of patients after receiving physiotherapy treatment for their knee osteoarthritis from CRP that may take 15 to 20 minutes to answer the questionnaire and 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 10.00 AM 11 August, 2018 on 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 orinformed consent and ask to be provided a copy of the final report. This Ethics committee isworking accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,

Millat Hossain

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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Appendix 3.1

মৌখিকসম্মতিপত্র

(অংশগ্রহনকারীকেপড়েশোনাতেহবে)

আস্সালামুআলাইকুম/ নমস্কার,

আমার নাম তামান্না জাহান তিথী, আমি ঢাকা বিশ্ববিদ্যালইয়ের চিকিৎসা অনুষদের অধীনে বাংলাদেশ হেলথ্ প্রফেশন্স ইন্সটিটিউট (□□□□□□□□) এর একজন ছাত্রী এবং আমি বাংলাদেশ হেলথ্ প্রফেশন্স ইন্সটিটিউট (বিএইচপিআ□) থেকে একটি গবেষণা প্রকল্প করছি যার বিষয় হল "হাঁটু ব্যথা রোগীদের সি.আর.পির ফিজিওথেরাপী চিকিৎসার প্রতি সন্তুষ্টি " যেটা আমার ফিজিওথেরাপী স্নাতক কোর্সেও আংশিক অধিভূক্ত। আমি এই গবেষণার মাধ্যমেহাঁটু ব্যথা রোগীদের সিআরপি ফিজিওথেরাপী চিকিৎসার প্রতি সন্তুষ্টি মাত্রা বের করতে চাচ্ছি।আমি এ কারনে আপনার কিছু ব্যক্তিগত এবং এ সমস্যা সম্পর্কিত কিছু তথ্য জানতে চাচ্ছি।এক্ষেত্রে আনু □□-□□ □□□□ □□□ □□□□ ।সুতরাংআপনাকেএইপ্রশ্নাবলিটিতেথাকাপ্রশ্নগুলিরআন্তরিকমতামতবাজবাবদিয়েসহায়তাকরারজন্যঅনুরোধকরাহচ্ছে। প্রদত্ত তথ্য সম্পূর্ণ গোপনীয়তা বজায় রেখে কেবল মাত্র আমার অধ্যয়নের উদ্দেশ্যে ব্যবহৃত হবে। আমি সরাসরি এই বিষয়ের সাথে জড়িত নয় যেখানে আপনি চিকিৎসা নিচ্ছেন এবং এই অংশগ্রহনের কারনে আপনি সরাসরি উপকৃত হবেন না এমন কি ক্ষতিগ্রস্থও হবেন না। আমি এর জন্য আপনাকে অর্থ প্রদান করব না। অধ্যয়নে আপনার অংশগ্রহণ সেচ্ছাপ্রণোদিত এবং আপনি যেকোন সময় এই অধ্যয়ন থেকে কোন নেতিবাচক ফলাফল ছাড়াই নিজেকে প্রত্যাহার করতে পারবেন।

এই গবেষণা সম্পর্কিত আপনার যদি কোন প্রশ্ন থাকে তাহলে আপনি আমার সাথে এবং/অথবা এহসানুর রহ□□,□□□□□ অধ্যাপক,□□□□□□□□□ □□□□, □□□□□□□□□ □□ □□□□ □□□□□□, □□□□, □□□□-□□□□ এ যোগাযোগ করতে পারেন।

□াক্ষাৎকার শুরু করার আগে আপনার কি কোন প্রশ্ন আছে? যদিনাথাকেতাহলেআমিভাববযেআপনি উপরোক্ত তথ্য সমূহ বুঝতে পেরেছেন এবং আপনি খুশি মনে অংশগ্রহণে ইচ্ছুক।

অংশগ্রহণকারীর স্বাক্ষর ..... □□□□ .....

গবেষকের স্বাক্ষর..... □□□□ .....

স্বাক্ষীর স্বাক্ষর .....□□□□ .....

Appendix 3.2

VERBAL CONSENT STATEMENT

Assalamualaaikum/Namashkar,

My name is TamannaZahanTithee, I am a student of BangladeshHealth Profession Institute (BHPI), under medicine faculty of the University of Dhaka and I'm undertaking a research project (dissertation) which is titled as "Satisfaction of patients after receiving physiotherapy treatment for their knee osteoarthritis from Centre for the Rehabilitation of the Paralysed"for the partial fulfillment of Bachelor of science in physiotherapy degree from BangladeshHealth Profession Institute (BHPI). I want to find out the level of satisfaction of patient about physiotherapy treatment. That's why I want to know some personal and other related information about your problem. This will take approximately 15-20 minutes. So you are kindly requested to assist in providing sincere opinion or response to the questions contained in this questionnaire. All information provided will be treated strictly as confidential and purely for academic purpose. I am not directly related with this area where you are taking treatment and you are not directly benefited or not harmed for this participation. I will not pay youfor this. Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences.

If you have any inquiry about the study you may contact with me and or EhsanurRahman, Assistant Professor of Physiotherapy Department, BHPI, CRP, Savar, Dhaka-1343.

Do you have any questions before I started? If not then I think that you have understood the information providing above and you are happily agreed to participate.

Signature of the participant…… Date……

Signature of the researcher…… Date……..

Signature of Witness ……. Date……...

Appendix 4.1

প্রশ্নপ

শিরোনামঃহাঁটুব্যথারোগীদেরসি.আর.পিরফিজিওথেরাপীচিকিৎসারপ্রতিসন্তুষ্টি

রোগীরসনাক্তকরণঃ (রোগীরতালিকাপুস্তক/রোগীরনিকটথেকেসংগৃহীত)

□	সনাক্তকরণ নম্বর
□	সাক্ষাতকারেরতারিখ
□	উত্তরবাদীরনাম
□	ঠিকানাঃ □□□□□/গ্রামঃ □□□□□□ □□□□ জেলাঃ
□	যোগাযোগনম্বরঃ
□	উপাত্তসংগ্রহেরস্থানঃ
□	সম্মতিগ্রহনঃ

পর্ব ১ ।রোগীর সামাজিক জনতাভিত্তিক তথ্যাবলী

(রোগীরতালিকাপুস্তক/রোগীরনিকটথেকেসংগৃহীত)

- □□□□ ..... □□□
- লিঙ্গঃ

  □।পুরুষ

  □।□।□□।
- □।□□।□□□ □□□□

  □।□□□ □।□□।□

  □। যৌথপরিবার
- □□।□□□□।□□

  □।গ্রাম

  □।মফস্বল

  □।□□□
- ধর্মঃ

  □।□□□।□

  □।হিন্দু

  □।খ্রিষ্টান

  □।বৌদ্ধ

  □।অন্যান্য (নির্দিষ্টকরণ)
- বৈবাহিক অবস্থাঃ

  □।□।□□।□□

  □।□□।□□।□

  □।তালাকপ্রাপ্ত

  □।□□।□□/বিপত্নীক

  □।অন্যান্য (নির্দিষ্টকরণ)

- শিক্ষাগত যোগ্যতাঃ

  □□নিরক্ষর

  □□নিম্নপ্রাথমিক

  □□প্রাথমিক

  □□নিম্নমাধ্যমিক

  □□মাধ্যমিক

  □□উচ্চমাধ্যমিক

  □□স্নাতক

  □□স্নাতকোত্তর

  □□অন্যান্য (নির্দিষ্টকরণ)

- পেশাঃ

  □□□□□□

  □□শিক্ষার্থী

  □□□□□

  □□পোশাকশ্রমিক

  □□শিক্ষক

  □□ব্যবসায়ী

  □□□□□□□

  □□বেকার

  □□অন্যান্য(নির্দিষ্টকরণ)

- উপার্জনকারী ব্যক্তিঃ

  □□□□

  □□□□□/□□□

  □□স্বামী

  □□অন্যান্য (নির্দিষ্টকরণ)

- □□□□ □□□

  ..... □□□

- ব্যথার স্থায়িত্বকালঃ

□□□	□□□	□□□

- চিকিৎসার ধরণঃ

  □□□□□

  □□□□□□□□□□□□

  □□শল্যচিকিৎসা

  □□অন্যান্য(নির্দিষ্টকরণ)

পর্ব ২। প্রশ্নবলী

□□ আপনি কোন ধরনের চিকিৎসা সি.আর.পি থেকে গ্রহণ করেছেন ?

□ফিজিওথেরাপীনেয়ারপূর্বেআপনারহাঁটুব্যথাকিআপনারদৈনন্দিনকাজকর্মকেপ্রভাবিতকরত?

□) যদি হ্যাঁ হয় , তবে কেন?

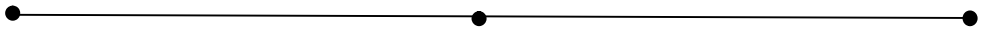
□) □□ □□ □□ , তবে কেন নয়?

□। আপনি ফিজিওথেরাপী চিকিৎসা নেয়ার পর আপনার কোন পরিবর্তন হয়েছে বলে মনে করেন কি ?

□) যদি হ্যাঁ হয়, তবে কোন ধরনের পরিবর্তন হয়েছে এবং কেন ?

□) □□ □□ □□, তবে কি ধরনের পরিবর্তন হয়নি বলে আপনি মনে করেন এবং কেন?

□। ফিজিওথেরাপী চিকিৎসা গ্রহনের পূর্বে আপনার ব্যথার তীব্রতা ভিজুয়াল এনালগ স্কেল অনুযায়ী কত ছিল ?

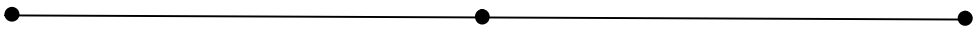


□ □ □□

ব্যথা নেই সহনীয় ব্যথা অসহনীয় ব্যথা

□ = ব্যথা নেই ১ -৩ = হালকা ব্যথা ৪ – □ = সহনীয় ব্যথা ৭ – □□ = অসহনীয় ব্যথা

□।ফিজিওথেরাপী চিকিৎসা গ্রহনের পরে আপনার ব্যথার তীব্রতা ভিজুয়াল এনালগ স্কেল অনুযায়ী কত ?



□□□□

ব্যথা নেই সহনীয় ব্যথা অসহনীয় ব্যথা

□ = ব্যথা নেই ১ -৩ = হালকা ব্যথা ৪ – □ = সহনীয় ব্যথা ৭ – □□ = অসহনীয় ব্যথা

□□ ফিজিওথেরাপীচিকিৎসাগ্রহনেরপরে বসা থেকে দাঁড়ানোর সময় কি আপনি কম ব্যথা অনুভব করেন ?

□) যদি হ্যাঁ :□□ , তবে কেন ?

□) □□□ □□ □□ , তবে কেন নয় ?

□ ফিজিওথেরাপীচিকিৎসাগ্রহনেরপরেহাঁটারসময় কি আপনি কম ব্যথা অনুভব করেন ?

□) যদি হ্যাঁ হয় , তবে কেন ?

□) □□□ □□ □□ , তবে কেন নয় ?

□ ফিজিওথেরাপীচিকিৎসাগ্রহনেরপরেআপনিকিসিঁড়িদিয়েউঠানামারসময়কমব্যথাঅনুভবকরেন ?

□) যদি হ্যাঁ :□□ , তবে কেন ?

□) □□□ □□ □□ , তবে কেন নয় ?

□ ফিজিওথেরাপীচিকিৎসাগ্রহনেরপরে আপনি কি কোন বড় ধরণের সমস্যার সম্মুখীন হয়েছেন ?

□) যদি হ্যাঁ হয় , তবে কি ধরনের এবং কেন ?

□) □□□ □□ □□ , তবে কেন ?

□□। আপনার চিকিৎসার সময় নিয়ে কি আপনি সন্তুষ্ট ?

□) যদি হ্যাঁ হয় , □বে কেন ?

□) □□□ □□ □□ , তবে কেন নয় ?

□□। আপনার সাথে যোগাযোগ রক্ষার ক্ষেত্রে আপনি আপনার ফিজিওথেরাপিস্টের প্রতি কি সন্তুষ্ট ?

□) যদি হ্যাঁ হয় , তবে কেন ?

□) □□□ □□ □□ , তবে কেন নয় ?

□□। আপনি আপনার ফিজিওথেরাপিস্টের পেশাগত ব্যবহারের প্রতি কি সন্তুষ্ট ?

□) যদি হ্যাঁ হয় , তবে কেন ?

□) □□□ □□ □□ , তবে কেন নয় ?

□□।□□.□□.পির থেরাপি রুমের পরিবেশে কি আপনি স্বাচ্ছন্দ্য বোধ করেন ?

□) যদি হ্যাঁ হয় , তবে কেন ?

□) □□□ □□ □□ , তবে কেন নয় ?

□□□ আপনি কি মনে করেন যে, আপনার মত যাদের হাঁটু ব্যথা আছে তারাও সি.আর.পি তে যি□□□□□□□□ □□□□ □□□□ ?

□) যদি হ্যাঁ হয় , তবে কেন?

□) □□□ □□ □□ , তবে কেন নয়?

□□□ □□□□□ □□□ □□.□□.পিরফিজিওথেরাপীসেবাসম্পর্কে কোন সুপারিশ থাকে তাহলে বিস্তারিত ভাবে বলুন।

□□। □□.□□.পিরফিজিওথেরাপীসেবাসম্পর্কেআপনারবিস্তারিত মন্তব্য দিন।

Appendix 4.2

Questioner

Questionnaire sheet

Title: Satisfaction of patients after receiving physiotherapy treatment for their knee osteoarthritis from CRP.

Patient identification (to be collected from medical record / respondent):

1.1: Identification number: ……

1.2: Date of interview: ……..

1.3: Name of respondent: ……..

1.4: Address: …….

House number/village: ……..

P.O: ……

P.S: …….

District: ……..……

1.5: Contact number: …….

1.6: Place of data collection: …….

1.7: Consent taken: ……

Part A: Socio-demographic information (to be collected from medical record / respondent):

1. Age: ……..years

2. Gender:

i. Male

ii. Female

3. Family type:

i. Nuclear family

ii. Extended family

4. Residential area:

i. Rural

ii. Semirural

iii. Urban

5. Religion:

i. Islam

ii. Hinduism

iii. Christian

iv. Buddha

v. Other (specify)

6. Marital status:

i. Single

ii. Married

iii. Divorced

iv. Separated

v. Widow

vi. Other (specify)

7. Educational status:

i. Illiterate

ii. Up to class- 5

iii. Primary school certificate (PSC)

iv. Up to class- 8

v. Junior school certificate (JSC)

vi. Secondary school certificate (SSC)

vii. Higher secondary certificate (HSC)

viii. Bachelor

ix. Masters

x. Other (specify)

8. Occupation :

i. Housewife

ii. Student

iii. Farmer

iv. Garment's worker

v. Teacher

vi. Businessman

vii. Day labourer

viii. Unemployed

ix. Other (specify)

9. Earning member:

i. Himself/Herself

ii. Husband/Wife

iii. Father/Mather

iv. Other (specify)

10. Average monthly income:

……TK.

11. Pain duration:

Day …….month…….year……..

12. Type of treatment:

i. Medication

ii. Physiotherapy

iii. Surgery

iv. Other (specify).

Part B: Questionnaires

1. What type of treatment you have received from CRP?

2. Before taking physiotherapy, did your knee pain affect your functional activities?

   i. If yes, then how?

   ii. If no, then how?

3. Is there any change after receiving physiotherapy treatment?

   i. If yes, what type of change has occurredand why?

   ii. If no, what type of change didn't occur you think and why?

4. What was your pain rating before taking physiotherapy treatment according to Visual Analogue scale?

0 5 10

No pain Moderate pain Worst possible pain

0 = No pain 1 - 3 = Mild pain 4 - 6 = Moderate pain 7 – 10 = Worst possible pain

5. What is your pain rating after taking physiotherapy treatment according to Visual Analogue scale?

0 5 10

No pain Moderate pain Worst possible pain

0 = No pain 1 - 3 = Mild pain 4 - 6 = Moderate pain 7 – 10 = Worst possible pain

6. Do you feel less pain during sit to stand activity after taking physiotherapy treatment?

i. If yes, then why?

ii. If no, then whynot?

7. Do you feel less pain during walking after taking physiotherapy treatment?

i. If yes, then why?

ii. If no, then why not?

8. Do you feel less pain during stair climbing after taking physiotherapy treatment?

i. If yes, then why?

ii. If no, then why not?

9. Do you face any kind of major problem after receiving physiotherapy treatment?

i. If yes, then whatand why?

ii. If no, then why?

10. Are you satisfied with the duration of treatment time?

i. If yes, then why?

ii. If no, then why not?

11. In term of communication are you satisfied with your therapist?

i. If yes, then why?

ii. If no, then why not?

12. Are you satisfied with the professional behavior of your therapist?

i. If yes, then why?

ii. If no, then why not?

13. Do you feel convenient with the environment of therapy room in CRP?

i. If yes, then why?

ii. If no, then why not?

14. Do you think that those who have knee pain like yours can take physiotherapy at CRP?

i. If yes, then why?

ii. If no, then why not?

15. Explain if you have any recommendation about physiotherapy service of CRP.

16. Explain your opinion about physiotherapy service in CRP?