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Evaluation of Quality of Life Among Patients with Knee Osteoarthritis.

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DECLARATION

I confirm that this dissertation is being submitted in partial fulfillment of the requirements for the degree of B.Sc. in Physiotherapy, and that it has not been accepted in substance for any degree or concurrently submitted as an application for any degree. I also confirm that the electronic copy of the thesis is identical to the bound copy, and that any finding of plagiarism or other forms of cheating in my work will result in my failure and subject me to disciplinary action from the appropriate authorities.

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CONTENTS

CHAPTER	CONTENT	Page no
	Acknowledgement	**I**
	Acronym	**II**
	List of table	**III**
	List of figure	**VI**
	Abstract	**V**
CHAPTER I	**INTRODUCTION**	
	1.1 Background	**1-5**
	1.2 Justification	**6**
	1.3 Research question	**7**
	1.4 Objective of the study	**8**
	1.5 General objectives	**8**
	1.6 Specific objectives	**8**
	1.7 Conceptual frame work	**9**
	1.8 Operational Definition	**10**
CHAPTER II	**LITERATURE REVIEW**	**11-18**
CHAPTER III	**METHODOLOGY**	**19-23**
	3.1 Study Design	**19**
	3.2 Study area	**19**
	3.3 Study place	**19**
	3.4 Study duration	**19**
	3.5 Study population	**19**
	3.6 Sample size	**19-20**
	3.7 Sampling technique	**20**
	3.8 Eligibility criteria	**20**
	3.8.1 Inclusion criteria	**20**
	3.8.2 Exclusion criteria	**20**
	3.9 Method of data collection	**21**
	3.9.1Technique of data collection	**21**
	3.9.2 Instrument of data collection Management of data	**21**

3.9.3 Procedure of data collection **21**
3.10 Management of data **21**
3.10.1 Data editing **21**
3.10.2 Data entry **22**
3.10.3 Data analysis **22**
3.11 Result **22**
3.12 Ethical consideration **22-23**
CHAPTER IV RESULT **24-39**
CHAPTER V DISCUSSION & LIMITATION **40-43**
CHAPTER VI CONCLUSION AND RECOMMENDATION **44-45**
CHAPTER VII REFERENCE **46-54**
APPENDIX
Informed consent
Gant chart

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ACRONYMS

BMI	Body Mass Index.
CVD	Cardio Vascular Disease.
DM	Diabetes Mellitus.
DU	Dhaka University.
EBR	Ethical Review Board.
HRQoL	Health Related Quality of Life.
HTN	Hyper Tension.
KOA	Knee Osteoarthritis.
OA	Osteoarthritis.
QoL	Quality of life.
SAIC	Student Admission Information Center.
SF-36	Short Form of 36.
SPSS	Statistical Package for Social Science.
VAS	Visual Analogue Scale.
WHO	World Health Organization.

List of Table

Table	Description	Pages
1	Frequency distribution of the participants by age group in years	24
2	Frequency distribution of the participants by living area	24
3	Frequency distribution of the participants by occupation	24
4	Frequency distribution of the participants by education	25
5	Frequency distribution of the participants by monthly income	25

List of figure

Figure	Description	Pages
1	Frequency distribution of the participants by gender	26
2	Frequency distribution of the participants by family type	27
3	Frequency distribution of the participants by marital status	28
4	Frequency distribution of the participants by BMI	29
5	Frequency distribution of the participants by taking medication	30
6	Frequency distribution of the participants by injury history	31
7	Frequency distribution of the participants by affected side	32
8	Frequency distribution of the participants by hyper tension	33
9	Frequency distribution of the participants by diabetes mellitus	34
10	Frequency distribution of the participants by cardio vascular pain	35
11	Frequency distribution of the participants by pain	36
12	Quality of life of the participants	37-38
13	Association between Age, Gender, BMI & SF-36	39

ABSTRACT

Background: Osteoarthritis was a continual degenerative joint disorder that reasons impaired joint feature and incapacity particularly amongst older patients. Aim of the study was to determine the evaluation in quality of life among patients with knee osteoarthritis in Dhaka city. **Objective:** Objective of the study to evaluation quality of life among patients with knee osteoarthritis in Dhaka city. **Methodology:** It was a descriptive type of cross sectional study. The patients with knee osteoarthritis attend in different physiotherapy center and hospital constituted the study population for the present study. I used open & close ended questionnaire & SF-36 scale. This study sample size was 130, data was analyzed with Microsoft office, excel 2016 using SPSS 22 version software program and test use of the study chi-square test. **Result:** There about 130 peoples assess with the mean score for physical functioning is 33.03. The mean score for physical health is 40.83. The mean score for emotional health is 37.62. The energy trait has a mean of 45.08. Emotional well-being shows a mean score of 38.05. Social functioning has a mean score of 41.62. The mean score for pain is 32.74. General health has a mean of 46.57. Regarding mean age group of the participants it was found that 51.89 in years out of 130 participants and frequency distribution of the participants by age group in years. The study of population made up of mainly female 53.85% and male 46.15%. This study found the age of the participants was in 35-45 years (29.2%). 46-55 years (40.00%),56-65 years (19.2%), 66-75 years (9.2%) and 76-85 years (2.3%) Maximum were in 46-55 years (40.00%), and small percentage 76-85 years (2.3%). **Conclusion:** The SF-36 item health survey was proper to evaluate quality of life of among patients with knee osteoarthritis. The analyzed knee osteoarthritis patients assess their quality of life as being then the examined controls in both physical and emotional health realms.

Keywords: Knee osteoarthritis, Quality of life, Physical health.

CHAPTER-I INTRODUCTION

1.1 Background

Osteoarthritis is the leading cause of degenerative joint disease and a significant global public health issue throughout the world (Alkan et al. 2014, p. 166). Inflammation and breakdown of cartilage promote the growth of new bone (spur) surrounding the joint. Pain, stiffness, and edema caused on by these degenerative changes significantly and lead to chronic disease and impairment as people age impair quality of life (Woo et al. 2016, p. 2433).

The World Health Organization (WHO) defines "quality of life" as an individual's assessment of their current situation with regard to their goals, standards, expectations, and worries as well as the culture and value systems in which they actually live (Ackerman et al. 2014, p. 9). In general, women are affected by OA more often than men, and its frequency rises with age. The knees are responsible for the majority of the impairment burden associated with OA. Indeed, over 90% of the growing number of complete hip or knee joint replacement procedures performed globally are triggered by an OA diagnosis (Newman et al. 2019, p. 52).

According to Kinsella et al. (2018), a number of Asian nations are quickly aging. According to estimates, the proportion of Asians 65 and older will more than double over the next 20 years, rising from 6.8% in 2008 to 16.2% in 2040. After decades of consistent socioeconomic expansion, demographic change occurred gradually in the majority of the industrialized world. The shift is being compressed into two or three decades in many Asian nations.

The percentage of the population 65 and older is predicted to rise by 316% in Singapore, 274% in India, 269% in Malaysia, 261% in Bangladesh, and 256% in the Philippines between 2008 and 2040. China and India were the two nations with the highest absolute numbers of individuals over 65 in 2008, although Japan had the oldest population in the world (21.6%) (Kinsella et al. 2018, p. 12). The goal of the copcord studies carried out in Bangladesh, Pakistan, and India was to identify gaps between privileged and poor or rural and urban areas by gathering data from multiple populations. Data from these two populations, adjusted for the 2001 Indian population census, were reported by one group of researchers' two comprehensive studies carried out in India.

According to this adjusted comparison, the prevalence of knee pain was much greater in rural communities (13.7%) than in urban ones (6.0%) (Joshi et al. 2019, p. 614). According to two surveys carried out in Pakistan, the urban rich cohorts in each research had a higher prevalence of knee discomfort than the urban poor cohorts. Both related this result to Pakistan's rising obesity rates as the country's wealth increased. A major survey in Bangladesh once again showed that the prevalence of knee pain was higher in wealthy urban populations than in poverty urban or rural groups (Haq et al. 2015, p. 203).

Worldwide 7% of people suffer from osteoarthritis (Hunter et al. 2020, p. 1711). Osteoarthritis pain is the main clinical sign and can be either persistent or sporadic (Neogi et al. 2013, p. 1145). In particular, it was discovered that the locations of discomfort and sex were sharply correlated with the effect of OA on quality of life (Lee et al. 2015, p.24). Osteoarthritis, however, has more symptoms than only pain. In addition, patients may experience joint cracking when moving (Pazzinatto et al. 2019, p. 491). And stiffness, particularly in the morning (Abramoff and Caldera, 2020, p. 293).

Osteoarthritis can be diagnosed with a comprehensive history and a physical examination (Donahue et al. 2018, p. 284). Some patients may initially be asymptomatic, radiographic findings may or may not be required for the diagnosis. Based on prior abnormalities in the afflicted joint, there are two main categories of osteoarthritis. Primary osteoarthritis is the first kind and affects joints without a history of abnormalities or triggering event or agent. Osteoarthritis in its secondary form is more prevalent than in its initial form. It is typically brought on by a history of abnormalities in the joints, such as hemoglobinopathy, rheumatoid arthritis, trauma, Paget disease, Ehlers-Danlos syndrome, or Marfan syndrome (Krishnan and Grodzinsky, 2018, p. 51).

Osteoarthritis has a number of risk factors, some of which may be changed and others of which cannot. Obesity, work status, comorbidities, and physical activity are the most significant modifiable factors that can be controlled to enhance joint function. Nonmodifiable risk factors for osteoarthritis include age and hereditary or genetic alterations that increase the likelihood of developing the condition (Georgiev and Angelov, 2019, p. 1145). A significant percentage of OA patients in Europe (59.6%) reportedly experienced moderate to severe pain, which affected other areas of their health.

Furthermore, it has been shown that even when using medication, OA patients experiencing moderate to severe pain had a major impact on their quality of life (Zhao et al. 2012, p. 3352). Additionally, those with OA reported lower levels of independent living, psychological well-being, and social connections than those without OA. To increase their HRQOL, this necessitates the appropriate form of intervention (Grassel and Muschter, 2020, p. 29). Numerous treatments are utilized to alleviate the symptoms of osteoarthritis in patients because of how it affects their standard of living nevertheless, no treatment can stop osteoarthritis from happening or offer long-term symptom alleviation (Yan et al. 2022, p. 1859).

Treatment choices for OA are often determined by the intensity and length of the patient's symptoms. They consist of complementary therapies like yoga and acupuncture, non-pharmacological therapies like physical therapy, pharmaceutical therapies like acetaminophen and non-steroidal anti-inflammatory medications, and surgical therapies like joint replacement. A thorough analysis indicates that OA significantly affects life quality (Tavares et al. 2020, p. 232). About 37% of adults over 60 in the US have been diagnosed with osteoarthritis in their knees. The aging of the global population is predicted to cause a 40% increase in the prevalence of osteoarthritis in the knee by 2025.

The fact that there are currently 19 million people in Brazil over the age of 60 and that by 2050, the population is expected to increase to 64 million. Makes this data much more concerning there (Rezende et al. 2013, p. 120). As the illness progresses, patients with osteoarthritis in their knees often experience increased pain, functional restrictions, and physical limits. These individuals suffer from a continuously growing influence on their daily activities, which has a detrimental effect on their social life, work connections, leisure time, and sleep (Sutbeyaz et al. 2017, p. 2071).

All of which have an adverse effect on their quality of life. Therefore, one of the most important outcomes to evaluate is the quality of life of patients with osteoarthritis in the knee. In general, a person's quality of life is evaluated based on the impact of their illness. There are no accurate data in Bangladesh. However, one figure shows that 10,392,681 persons had osteoarthritis in 2004 the general prevalence of the condition. Six percent of those over 50 report having significant knee pain and functional impairment, and about 25% of them report having chronic knee pain (Blagojevic et al. 2010, p. 24). In addition to their pain, older adults with KOA may have a poor quality of life due to stiffness, deformity, reduced range of motion, and dependence on others

to perform daily duties. These factors have a detrimental effect on the global economy and society (Suchting et al. 2020, p. 57). Therefore, rather than being exclusively brought on by structural injury to the knee, KOA pain is a result of both local and structural abnormalities at many neuroaxis levels (Fingleton et al. 2015, p. 1043). The utility of radiological data in predicting clinical outcomes in KOA is still controversial, and evidence shows that the degree of pain and impairment is only very weakly predicted by the radiographic severity itself (Serban et al. 2016, p. 318).

Multiple research studies have connected the duration of KOA pain to both peripheral and brain sensitization (Graven-Nielsen et al. 2012, p. 2907). However, it is still unknown how much central sensitization affects self-reported pain intensity (Lluch et al. 2014, p. 1367). Recent research has shown a strong correlation between experimental pain measures such the descending conditioned pain modulation (CPM), pain pressure threshold, and temporal summation and clinical pain, despite the absence of studies with small sample sizes (Skou et al. 2013, p. 111).

According to a comprehensive study, anxiety and depression can negatively impact a person's health-related quality of life (HRQol) by influencing their perception of pain and physical functioning (Sharma et al. 2016, p. 103). Psychological issues can be exacerbated or caused by knee OA pain (Hansen and Streltzer, 2015, p. 339). One chronic condition appears to have a negative impact on the development of the other, suggesting that the two chronic diseases interact reciprocally (Somers et al. 2019, p. 501). Additionally, pain-related cognitions as pain catastrophizing and self-efficacy are consistently linked to pain intensity and functional decline in KOA patients (Helminen et al. 2016, p. 890).

It is the most prevalent joint disease among the elderly, affecting 10% of those over 60. It is more common in women (Herman et al. 2015, p. 1955). It is projected that 50% of the population will be affected by OA within the next 20 years, because of the increasing rates of aging and obesity (Hunter et al. 2014, p. 1711). According to the Centers for Disease and Prevention, osteoarthritis affects 240 million people globally, including more than 30 million Americans; in 1990, there were 21 million with the condition, but by 2005, that figure had risen to 27 million (Zhang and Jordan, 2018, p. 515). This study aims to examine how individuals with osteoarthritis in the knee assess their quality of life.

This study examines the relationship between pain and many facets of quality of life (QoL), including physical functioning, emotional well-being, and social participation. The intention is to offer information that will direct therapeutic practice and enhance the creation of customized solutions. The ultimate goal is to improve the overall quality of life for those who suffer from this chronic and often painful condition.

1.2 Justification of the study:

Osteoarthritis is one of the most more common musculoskeletal disorders that can affect a person's quality of life. Many patients seek treatment for osteoarthritis in their knees, but the results are not always pleasant or effective because of their limits in performing regular tasks at work and around the house. When the cartilage in your knee joint breaks and the bones begin to rub against one another, osteoarthritis of the knee develops. The friction causes your knee to ache, stiffen, and occasionally swell. People are currently experiencing an epidemic of osteoarthritis in their knee joints. Research on assessing the quality of life of patients with osteoarthritis in the knee has been conducted in several nations, but none has been conducted in Bangladesh. This study described a patient's life difficulties as a result of osteoarthritis in the knee. Many misconceptions regarding osteoarthritis in the knee would be clarified by the investigation. Due to a lack of information, the few studies that were located locally were insufficient to give the full picture of the situation. Additionally, the study was carried out a few years ago, so it does not accurately reflect the current state of conditions in this area. Therefore, knowing what happened is crucial. Because of this, a study on this subject is required in order to decrease the information gap and take preventative action to confirm the association between knee osteoarthritis patient’s quality of life and function independence. Doing this research is crucial. Osteoarthritis is a serious public health issue that affects many people. It has a significant social and professional impact since it causes pain and functional incapacity. Researchers are interested in learning more about my research, including how much mobility people with osteoarthritis in their knees can have, how much it impairs their daily lives, how much damage it causes, and how their quality of life is affected by their lifestyle. The physiotherapist will gain more professional information from the study's findings. After I complete my research, physiotherapists will have a better knowledge of how people with osteoarthritis in their knees assess their overall quality of life. The current study's findings will assist policymakers in planning health initiatives that will help people prevent osteoarthritis and enhance their quality of life.

1.3 Research Question:

What is the level of quality of life among the patients with knee osteoarthritis?

1.4 Objectives of the study

1.5 General objective

1.To evaluate quality of life among the patients with knee osteoarthritis attending physiotherapy center in Dhaka city.

1.6 Specific objective

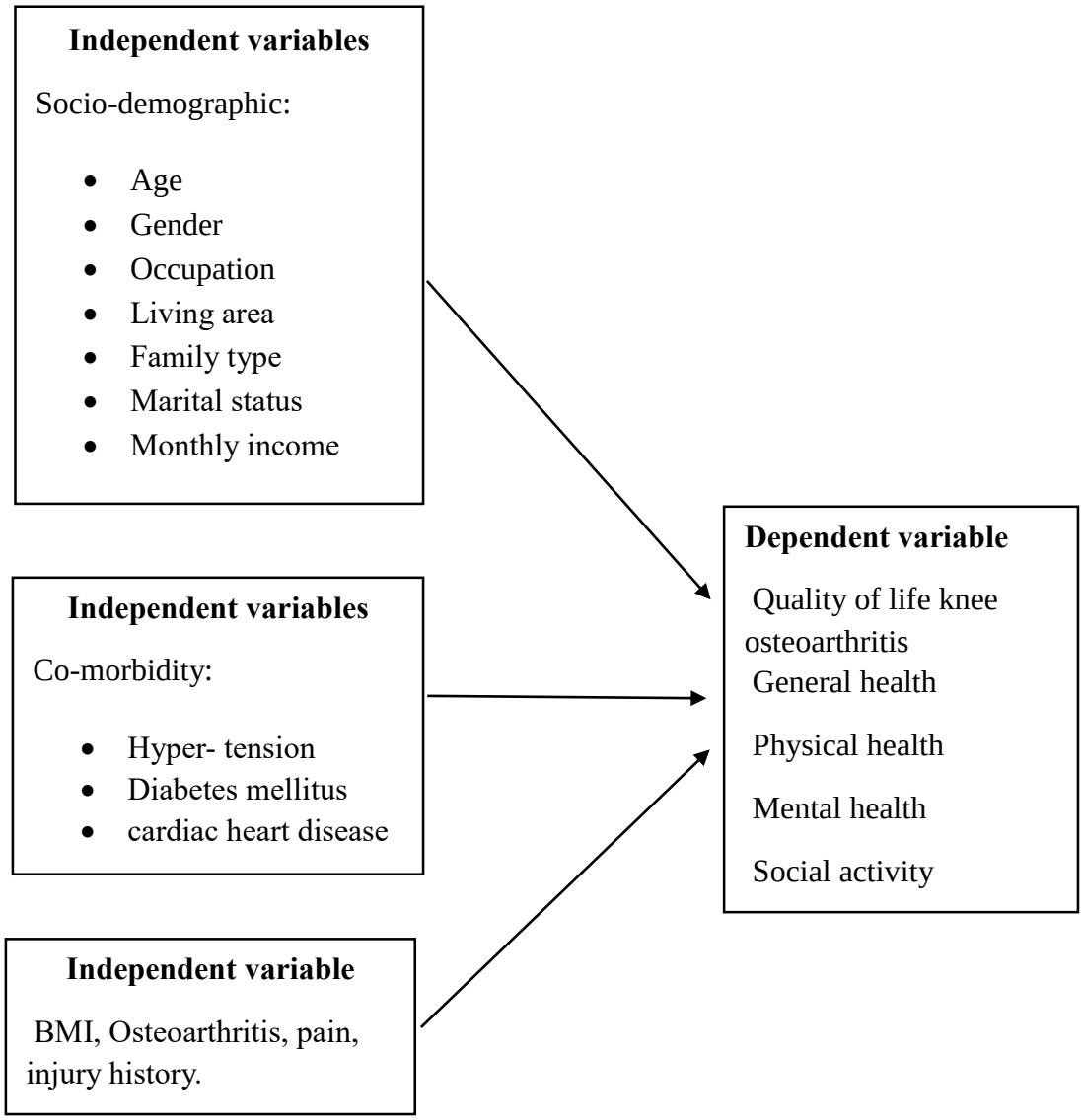
1. To assess the severity of pain by VAS scale among the patients with knee osteoarthritis.

2. To elicit the quality of life among the patients with knee osteoarthritis by SF-36 questionnaire.

3. To find out sociodemographic conditions of the patients with knee osteoarthritis.

4. To examine the association between body mass index and bodily pain of the patients.

1.7 Conceptual framework



1.8 Operational definition of the variables

Osteoarthritis: Osteoarthritis is one of the most prevalent types of arthritis. Some people know it as wear-and-tear arthritis or degenerative joint disease. The hands and knees are where it happens most often. When a joint has osteoarthritis, the cartilage starts to breakdown and the underlying bone changes.

.

Knee osteoarthritis: When the cartilage in your knee joint gets worse and the bones begin to rub against one another, you have osteoarthritis of the knee. The friction causes your knees to ache, stiffen, and occasionally swell.

Quality of life: A person's assessment of their place in life within the structure of their culture and value systems, as well as in connection to their objectives, standards, concerns, expectations, and other matters, is referred to as their quality of life.

SF-36: The SF-36 has been used. Eight dimensions of health physical functioning, physical role, pain, general health, vitality, social function, emotional role, and mental health are intended to be represented by the 36 questions on the SF-36.

CHAPTER-II LITARATURE REVIEW

Knee osteoarthritis is significant age-related public health concern that is characterized by a progressive loss of articular cartilage that causes pain, functional impairment, disability, and a reduction in the patient's quality of life (Farr et al. 2013, p. 619). Osteoarthritis (OA) is the most prevalent chro nic rheumatic disease and the primary cause of pain and disability in most nations worldwide. Several epidemiological studies that examined the risk factors for knee OA found that the incidence or progression of knee OA was consistently correlated with age, obesity, weight loss or gain, sex, history of knee injuries, occupational physical demands, physical activity, lifestyle, and geographic location (Haq and Davatchi, 2011, p. 203).

Osteoarthritis OA is the most common degenerative joint disease and a major global public health concern (Alkan et al. 2014, p. 166). Inflammation and cartilage breakdown around the joint encourage the formation of spurs, or extra bone (Ciombor et al. 2013, p. 455). Knee osteoarthritis (KOA) is the most prevalent form of osteoarthritis (OA) worldwide. It is characterized as a complex, multifaceted illness that mostly causes pain and incapacity in the elderly. It is distinguished by increasing articular cartilage degradation and subchondral bone sclerosis (Loeser et al. 2012, p. 1678) (Van der Kraan et al. 2012, p. 1447).

According to extensive epidemiology research, hundreds of millions of adults worldwide, spanning all age groups, suffer from osteoarthritis (OA), which is a major common cause of extremely poor quality of life (QoL) (Cross et al. 2014, p. 1323). According to research, people with knee OA had a quality of life that was over 50% worse than that of patients without the condition (Ackerman et al. 2011, p. 481). These degenerative changes, which cause discomfort, stiffness, and edema and result in chronic disease and impairment with advanced age, have a substantial impact on quality of life (QoL) (Woo et al. 2016, p. 2433).

According to Jinks et al. (2014), 6% of those over 50 who report having chronic knee pain also report having significant knee pain that interferes with their ability to perform (Blagojevic, 2010, p. 24). Since age is the primary factor linked to the development of OA, it is anticipated that the impact of knee osteoarthritis on the global systems of healthcare will rise as the population ages (Martel-Pelletier et al. 2019, p.19).

Osteoarthritis is a serious health issue that lowers quality of life (QOL) (Mahmoudi et al. 2016, p. 158). And causes functional impairment, disability, and handicap. Two-thirds of patients have movement limitations, 80% and 25% are unable to carry out daily chores. Among the impairments include pain, trouble walking, climbing stairs, and doing housework. The annual incidence of knee osteoarthritis symptoms is predicted to be 240/100,000 persons (Mahir et al. 2016, p. 135). In Nepal, osteoarthritis is becoming more common. The synovium, bone, and hyaline cartilage are the main tissues affected by osteoarthritis (Krasnokutsky et al. 2018, p. 2).

This joint disease starts with cartilage degeneration and progressively spreads to the subchondral bone and periarticular soft tissues, resulting in chronic inflammation, synovitis, osteophytosis, loss of joint space, bone remodeling, and finally, severe and irreversible joint destruction (Heijink et al. 2012, p. 423). Approximately 10% of people over 60 report having this illness. About 37% of people over 60 in the US have been diagnosed with osteoarthritis in their knees. As the world's population ages, it is predicted that the prevalence of osteoarthritis in the knee would rise by 40% by 2025.

The fact that there are currently 19 million Brazilians over 60 and that number is predicted to rise to 64 million by 2050 makes this data even more concerning (Rezende et al. 2013, p. 120). Regional differences exist in the prevalence of OA. Sitting on the ground, kneeling, sitting cross-legged, laying, and performing the salaat, a form of Islamic prayer, are all common practices in Asian, Far Eastern, and Middle Eastern civilizations. These activities that require excessive knee flexion might cause the knee to experience elevated pressure, which can initiate the OA process (Hodge et al. 2019, p. 448).

Due to their regular repetition and essential role in daily life, these activities are linked to a higher prevalence of OA in these societies. The incidence of OA in the Turkish population increases yearly, similar to that of countries in the Middle East and the Far East, due to risk factors caused by similar activities that people regularly engage. As a result, their functional activities are severely limited (Santos et al. 2014, p. 54). Osteoarthritis (OA) affects an estimated 4% of Brazil's elderly population, with the knee making up 37% of affected joints. According to a study on the prevalence of osteoarthritis (OA) in Turkey, 14.8% of those over 50 had knee OA symptoms (Kacar et al. 2015, p. 201).

In populations with lifestyles similar to Turkey's, several studies have looked at the prevalence of OA as well as its functional and physical effects (Muraki et al. 2019, p. 1137). However, none have examined how OA affects the health of this population. The purpose of this research is to evaluate the physical and functional traits of people with osteoarthritis as well as the ways in which knee OA patients in Turkish society are impacted by their condition. Approximately 25% of persons over 50 say they have persistent knee discomfort. with 6% of those individuals reporting severe knee pain and functional impairment (Jinks et al. 2014, p. 55) (Blagojevic, 2010, p. 24).

Since age is the primary factor linked to the development of OA, As the population ages, it is projected that the burden of KOA on the world's health care systems will increase (Du et al. 2015, p. 585) (Martel-Pelletier et al. 2019, p. 19). Thailand and other developing nations share a similar prevalence of knee osteoarthritis (OA) with high-income countries (HIC) (Tangtrakulwanich and Suwanno, 2012, p. 1048). The purpose of this study is to determine the relationships between the SF-36 and other common clinical measures and to use the SF-36 to assess quality of life (QoL) in patients with knee OA. We suggest that pain, functional status, and disability may be connected to quality of life in people with knee OA.

People with osteoarthritis feel that their quality of life is poor in terms of pain, functional limitations, and functional capacity. There is a substantial correlation between poor educational achievement and bad life quality. This outcome was also linked to the fact that those with less education exert more effort and make a bigger difference (Kawano et al. 2015, p. 307). This investigation on Turkish OA patients and the literature found similar risk factors. Losing weight can prevent OA from forming and reduce its symptoms because obesity is a controllable risk factor.

Given that physical inactivity has been implicated as a major contributing factor to the development of obesity, it is imperative that patients with knee OA continue their regular exercise regimen. Accordingly, we found that studies that evaluate risk factors in a larger number of patients can produce more objective data, increasing the likelihood that knee OA would be successfully treated (Bakirhan et al. 2017, p. 248). Patients with knee OA had a significantly worse quality of life than healthy controls. The SF-36 physical function and pain ratings, effusion, VAS pain, and all WOMAC and Lequesne subgroup parameters were shown to be strongly correlated in patients with knee OA.

We found that WOMAC and SF-36 pain scores were higher in female patients. One sensitive health status tool that can be used for clinical assessment is the SF-36. It correlates to the functional abilities and clinical state of people with knee OA. Furthermore, in situations of knee OA, WOMAC can be used as a sensitive measure of a patient's disability (Alkan et al. 2014, p. 168). Finally, our research provides evidence that psychological aspects related to central and peripheral sensitization affect how clinical pain is experienced by older subjects suffering from chronic pain from KOA. The findings of this investigation offer additional proof that treating KOA pain requires a multimodal strategy that includes therapies that target several different brain sites (Tavares et al. 2020, p. 123).

This study emphasizes the benefits of current open access clinical practices as well as the chance to develop health service systems that will have a positive impact on patient care in the future. Patients' QoL seems to be influenced by patient and health service system characteristics in knee OA patients. Above all, patients are the starting point and the finish line for an efficient administration of OA treatment. Additionally, as patient SM is still a crucial element, research efforts must be focused on particular therapies to improve patient SM (Choojaturo et al. 2019, p. 7).

Using the SF-36 questionnaire, the study investigated how patients with osteoarthritis in the knee perceived their quality of life. The findings revealed a high correlation between low quality of life and low educational attainment, as well as low judgments of functional capacity, restrictions, and pain. Active people scored higher than pensioners, while the majority of participants were retired. The study also discovered a greater proportion of female patients, suggesting a higher incidence and prevalence of osteoarthritis in the knee (Batsis et al. 2014, p. 13).

The study showed no significant gender differences in the quality of life categories measured by the SF-36. With a mean age of 61.2 ± 11 years and an average diagnosis time of 8.1 ± 7.6 years, this suggests that early symptoms have an impact on labor, productivity, and treatment costs (Hermans et al. 2012, p. 1955). Knee osteoarthritis costs €871 a month on average, with 17% going toward direct treatment expenditures and 83% going toward lost productivity. For populations diagnosed before the age of 60, this expense is much greater. According to a study, the SF-36 questionnaire's quality of life areas and educational attainment differed significantly.

Higher educated patients had better functional limitation, pain, and functional capacity. It also suggests that a lack of education could be the cause of the detrimental effects on patients' quality of life brought on by a lack of knowledge regarding therapy and prevention (Alkan et al. 2014, p. 171). Due to their low-middle level of education, 70% of survey participants experienced a bad quality of life. Due to repetitive physical work or manual occupational tasks, low educational attainment raises the risk of osteoarthritis and lowers subjective quality of life. Age above 60, obesity, hard labor, and female gender are additional risk factors (Jhu et al. 2013, p. 1807).

It also indicates the negative impact on patients' quality of life caused by knowledge about treatment and prevention may be due to a lack of education (Alkan et al. 2014, p. 167). Seventy percent of survey respondents reported having a poor quality of life as a result of their low-middle educational attainment. Low educational attainment decreases subjective quality of life and increases the risk of osteoarthritis due to manual occupational tasks or repetitive physical labor. Other risk factors include being over 60, being obese, working hard, and being a woman (Jhu et al. 2013, p. 1820).

Despite research indicating that functional activity levels in patients with knee OA decline with age, the study did not find a significant relationship between activity score and age groups. People between the ages of 60 and 69 had the highest prevalence of osteoarthritis (Dunlop et al. 2011, p. 127). Age and osteoarthritis (OA) activity levels did not correlate, according to the study, which suggests that patients in more advanced stages need more severe surgical treatments.

Delaying surgery may be possible with knee-protective activities including daily living and proper body weight. Joint load, pelvic structure, knee morphology, Q angle, neuromuscular strength, hormonal fluctuations, and bone balance are some of the elements that influence women's propensity to squat more during everyday tasks like cleaning and toileting (Hunter et al. 2015, p. 1711). Women may be more affected than males by older men losing their jobs, which could result in more female patients. According to a study, obesity is a major risk factor for osteoarthritis in the knee, and 80% of patients were female. Studies have shown that women who lose weight had a 50% lower risk of developing OA and experiencing less symptoms (Sarzi-Puttini et al. 2015, p. 7). Obese patients are more likely than non-obese patients to need a complete knee prosthesis, making obesity a serious health concern.

Obesity is a risk factor for osteoarthritis in the knee since studies conducted in Turkey reveal that obese people have a higher mean BMI than non-obese patients. Additionally, lower patient HSS knee ratings, pain scores, and walking and functional activity scores are linked to obesity. According to studies, lowering weight, lessening knee pain, and boosting functional activities can all help to lessen the joint overload that comes with obesity (Roddy et al. 2016, p. 81). Maintaining healthy joints and avoiding obesity require a proper diet, regular exercise, and lifestyle modifications. Daily tasks like getting out of a chair can be difficult for patients with knee OA, which might reduce their independence or force them into an institution.

Patients find it more challenging and time-consuming when the STS test indicates decreased QF muscle strength. According to Patsika et al. (2011), one important factor influencing impairment in individuals with knee OA is QF weakness. In both older individuals without pain and those with osteoarthritis, knee extensor strength is a substantial risk factor for impairment. Joint damage, discomfort, and incapacity are all associated with decreased QF muscle strength. However, there is no relationship between QF muscle strength and knee OA.

Increased QF muscle strength can enhance independence and functional activities. Functional activities require knee flexion of at least 105 degrees (Brandt et al. 2019, p. 2431). According to the study, people with knee OA have limited range of motion and functional activities. The average knee flexion of 100° is not enough for activities of daily living, indicating the need for self-care items and adaptive techniques for independent functioning. With the exception of overall health and role emotional subscores, this study indicated that individuals with lower-extremity osteoarthritis had a significant impairment in health-related quality of life (QoL) (Yildiz et al. 2010, p. 1595).

The SF-36 role physical subscore and radiological severity were shown to be strongly correlated in the study, but not with the pain subscore. Pain subscore did not correspond with radiological severity, although physical mobility did. In contrast to knee flexion range of motion and crepitus, swelling was associated with SF-36 physical function and pain subscores (Avasthi et al. 2019, p. 15). The inability to evaluate the physical and mental components of the SF-36 and the lack of an assessment of the association between depression and QoL are two of the study's problems.

According to the study, older people with knee osteoarthritis (KOA) experience more pain when they have worse peripheral structural damage, elevated peripheral sensitivity, dysfunctional CPM, and anxiety. Physical function and HRQol are negatively impacted by this combination as well as bad psychosocial variables. Clinical, radiological, and cognitive factors in older patients are combined for the first time in this study (Tavares et al. 2020, p. 125). According to the study, people with knee OA who have low socioeconomic status (SES) typically retire early and have lower quality of life (QoL).

The majority of elderly patients cannot afford to retire, which is a result of economic problems. QoL in patients with knee OA is not correlated with SES alone (Espinosa et al. 2017, p. 187). According to the study, knee OA patients' quality of life (QoL) scores were strongly correlated with international standards, and worsening knee OA symptoms were associated with declining QoL. Patients with higher socioeconomic status may not have greater access to medical care. According to the study, people with knee OA who practiced better self-management (SM) had higher quality of life and easier access to medical care.

In order to preserve their health and live well with knee OA, patients believe that they must take personal responsibility for changing their lifestyles, beginning medication or non-pharmacological treatments, and getting information (Wluka et al, 2016, p. 234). The ability of patients to control their own illness is impacted by self-management (SM), which is closely related to socioeconomic (SES) and disease characteristics. Low-SES patients require enough information to take charge of their own care. In contrast to earlier studies that found a lesser SM is associated with a higher symptom load, knee OA patients attempt SM as their symptoms worsen (Khan et al. 2017, p. 18).

Patients with knee OA frequently think it's a natural part of aging, but SM is frequently overlooked and not included in patient education. Despite its benefits, SM is frequently underappreciated. Although SM-related support is a focus for healthcare practitioners, a recent research indicates that SM support might not be sufficient to enhance patients' health outcomes (Walsh et al. 2016, p. 420). A deeper comprehension of health service delivery, evidence alignment, and patient-centered treatment are required to enhance patients' quality of life (QoL) in individuals with knee osteoarthritis (OA).

This entails changing our perspectives and visualizing ourselves as patients, particularly those from disadvantaged socioeconomic backgrounds. More proactive management may result from a greater understanding of the complex effects of OA on the populace (Yildiz et al. 2010, p. 1595). According to the study, the quality of life (QoL) of patients with osteoarthritis (OA) in their knees was significantly lower than that of healthy controls. When OA patients were compared to the general population, their physical and mental health scores were lower. Using the SF-36 and WOMAC questionnaires, the study also discovered a direct relationship between pain severity and quality of life. These tools offer useful data regarding the health state of OA patients (Brazier et al. 2019, p. 870).

Radiological severity and the SF-36 role physical subscore were shown to be strongly correlated, but not with the pain subscore. While the pain subscore was uncorrelated with radiological severity, the physical mobility subscore was. In contrast to knee flexion range of motion and crepitus, swelling was associated with SF-36 physical function and pain subscores. swelling is the only factor in OA that is substantially correlated with the severity of the illness (Creamer et al. 2020, p. 490).

Although female patients reported more severe clinical pain, the study did not find a significant correlation between the severity of knee OA and discomfort. With the exception of the role physical subscore, there was no apparent connection between age and any of the QoL subscales. Age and physical functioning have been found to be negatively correlated in prior research, suggesting that patients' physical functioning declines with age. The correlation between depression and quality of life, as well as the lack of summary of mental and physical components, may be impacted by racial and cultural gaps.

According to the study, those with knee OA had a poorer quality of life (QOL) than people without the condition. While the mental component scored 62.09-15.97, the physical component's average QOL was 38.18-19.48. While there was no significant correlation between age, sex, BMI, marital status, occupation, or family type, age and occupation were determined to be significant determinants affecting the quality of life. In the majority of QOL domains, patients with greater BMIs and co-morbidities performed worse. The results align with other research from Turkey, Brazil, India, and Mangalore (Shrestha, 2018, p. 81).

CHAPTER-III METHODOLOGY

3.1 Study design:

It was a descriptive type of cross sectional study carried out with the objective of evaluation quality of life of patients suffering from knee osteoarthritis.

3.2 Study area:

The relevant data for the present study were collected from the patients suffering from knee osteoarthritis attending Unique pain & paralysis center. Mirpur-11. Academy of physiotherapy pain & rehabilitation center. Mirpur-10. and Saic college of medical science and technology outdoor service.

3.3 Study place: The researcher is a student of 4th year B.Sc. in Physiotherapy of SAIC college of Medical Science and Technology, Mirpur, Dhaka. Therefore, the study was carried out at the researcher's college.

3.4 Study period:

The duration of study was 12 months from September 2023 to Aug 2024.

3.5 Study population:

The patients with knee osteoarthritis attended in different physiotherapy center constituted the study population for the present study.

3.6 Sample size:

Sample size for this study was calculated by the following equation.

$$n = \frac{z^2 pq}{d^2}$$

Here,

n= Sample size

Z= 1.96 (confidence level at 95% (standard value of 1.96)

P= prevalence 27.1% (Venkatachalam et al. 2018, p. 117).

q= 1-p

d=0.05 (margin of error at 5% (standard value of 0.05)

$$n = \frac{z^2 pq}{d^2}$$

$$n = \frac{(1.96)^2 \times 0.271(1 - 0.271)}{(0.05)^2}$$

$$n = \frac{0.7586}{0.0025}$$

$$n = 303$$

So, this equation result here total sample size was 303, but I had collected data from 130 patients due to time limitation.

3.7 Sampling technique:

Convenience sampling technique was applied to select the study subjects for this study.

3.8 Eligibility criteria

3.8.1: Inclusion criteria

The study includes age range between 35 to 80 (Kawai et al. 2013, p. 1569).

Patients with Knee osteoarthritis by radiological finding.

Both male and female.

3.8.2: Exclusion criteria:

Less than 35 year's patients

who are not willing to express themselves.

who are mentally unstable.

Associated with others critical disease conditioning: Cancer, Tuberculosis.

3.9: Method of data collection:

3.9.1 Technique of data collection

Data were collected through face to face interview with participants by questionnaire.

3.9.2: Instruments of data collection:

SF-36 was used as an instrument of data collection for the present study SF-36 is widely applied to assess the quality of life of the patients. It is invented by use to determine physical functioning, physical role limitations, emotional role limitation, energy / vitality, emotional well-being, social functioning, pain, general health perceptions. A pre- tested Semi-structured questionnaire was used to collect information on socio-demographic characteristic of the participants.

3.9.3: Procedure of data collection:

Before collecting the data from the participants, the researcher obtained permission from the concerned authority of Unique pain and paralysis center. Mirpur-11. Academy of physiotherapy pain and rehabilitation center. Mirpur10. and Saic college of medical science and technology outdoor service. Then the patients with knee osteoarthritis were approached by the researcher himself and explain the aims and objectives of the study in details. The patients who agreed to participate were include for the study. Obtaining written informed consent, the researcher started interview with the individual participant using SF-36 questionnaire to elicit information on quality of life. After completing the interview, the researcher thanked the respondents.

3.10 Management of data

3.10.1 Data editing

It characterized by reviewing and cleaning the collected data to identify and correct errors, inconsistencies, or missing information. The primary goal of data editing is to ensure the accuracy, reliability, and completeness of the data before proceeding with data analysis. Proper data editing helps to produce valid and meaningful research results.

3.10.2 Data entry

Data entry is the process of converting raw data from various sources into a digital format or a data management system, such as a spreadsheet, database, or data entry software. It is a fundamental step in research, business, and other domains where data needs to be organized, analyzed, and utilized efficiently. Data entry involves carefully inputting information from paper documents, questionnaires, surveys, or other sources into a computer or electronic system.

3.10.3: Data analysis

Data analysis was done using statistics. Methods of characterizing a collection of results according to its unique features are referred to as descriptive statistics. Software known as the Statistical Package for the Social Sciences (SPSS) version 22 was used to analyze the data. After identifying the variables in a list, the researcher created a computer-based data definition record file with the variables listed in chronological sequence. In SPSS's variable view, the researcher entered the variables' names and specified the data types, values, decimal places, label alignment, and measurement level. In order to verify that all of the data had been correctly translated from the questionnaire sheet to the SPSS data view, the next step involved cleaning up new data files. Following that, the raw data was prepared for analysis in SPSS. Descriptive statistics were used to analyze the data, which were then converted into percentages and displayed using tables, bar graphs, pie charts, and other formats. The study's outcome was quantitative data, and a great deal of information was gathered.

3.11: Result

The findings of the study have been presented with the tabulations, charts, graphs and description in the result section of the thesis.

3.12: Ethical consideration

The investigator was obtain written permission from ethical review board (SCMST). Ethical review board informed by written document about aim and objectives of the study and that the patients of the study will not harm or the clients name, address and

personal information will be kept confidential by the investigator mentally and the dates will not share with others.

- Approval received from the IRB of SCMST.
- Data collection permission was taken from the head of physiotherapy department of SCMST.
- Confidentially maintained strictly.
- Informed consent was taken from every participants.

CHAPTER-IV RESULTS

The objectives of the study was to assess the level of quality of life of patients suffering from knee osteoarthritis. Data were collected through the face to face interview with participants using a pretested questionnaire and SF-36 questionnaire for quality of life. The data were analyzed with the Microsoft office excel 2016 with SPSS 22 version software program. In this study the researcher used frequency tables, bar chart, pie chart, figure and description of the variables to present the result of the study.

Table no 1: Frequency distribution of the participants by socio-demographic variables.

Variable	**Frequency**	
Age group in years	**N**	**Percentage%**
(35 to 45)	38	29.2
(46 to 55)	52	40.0
(56 to65)	25	19.2
(66 to 75)	12	9.2
(76 to 85)	3	2.3
Total	130	100.0
Mean age group of the participants by years		51.89
Living area	**N**	**Percentage%**
Urban	93	71.5
Semi-urban	9	6.9
Rural	28	21.5
Total	130	100
Occupation	**N**	**Percentage%**
Business	10	7.7
Farmer	6	4.6
Housewife	54	41.5
Other	60	46.2
Total	130	100.0

Education	**N**	**Percentage%**
Illiterate	10	7.7
Primary	30	23.1
Secondary	39	30.0
Higher secondary	21	16.2
Others	30	23.1
Total	130	100.0
Taka	**N**	**Percentage%**
(10-50)k	109	83.8
(51-100)k	20	15.4
(101-200)k	1	0.8
Total	130	100.0

Regarding mean age group of the participants it was found that 51.89 in years out of 130 participants and frequency distribution of the participants by age group in years, it was found that out of 130, 38 (29.2%) participants belonged to the age group of 35-45 years. It was also found that 52 (40.00%) participants were in the age group of 46-55 years, 25 (19.2%) participants were in the age group of 56-65 years, 12 (9.2%) %) participants were in the age group of 66-75 years, 3 (2.3%) participants were in the age group of 76-85 years. About living area of the participants, it was revealed that 93 (71.5%) participants were living urban area,9 (6.9%) participants were living semi-urban area and 28 (21.5%) participants were living rural area. The study showed that the occupation of 10 (7.7%) participants were business, 6 (4.6%) participants were farmer, 54 (41.5%) participants were housewife, 60 (46.2%) participants were other occupation. About educational status of the participants, the study showed that 10 (7.7%) participants were illiterate, 30 (23.1%) participants were primary, 39 (30%) participants were secondary, 21 (16.2%) participants were higher secondary, 30 (23.1%) participants were other gradual and above level of education. About monthly income it was found that out of 130 participants, 109 (83.8%) participant had less than taka 50000, it was also found that monthly income of 20 (15.4%) participants were taka (51000-100000. 1 (0.8%) participants had taka more than > 100000.

Frequency distribution of the participants by gender.

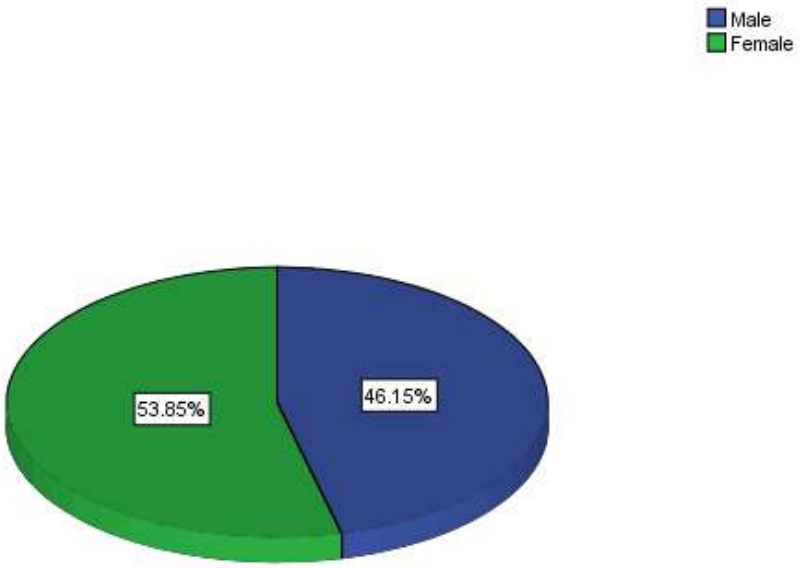


Figure no:1 Gender of the participants

Among the participants, it was revealed that 60 (46.15%) participants were male and 70 (53.85%) were female (figure no :1)

Frequency distribution of the participants by family type.

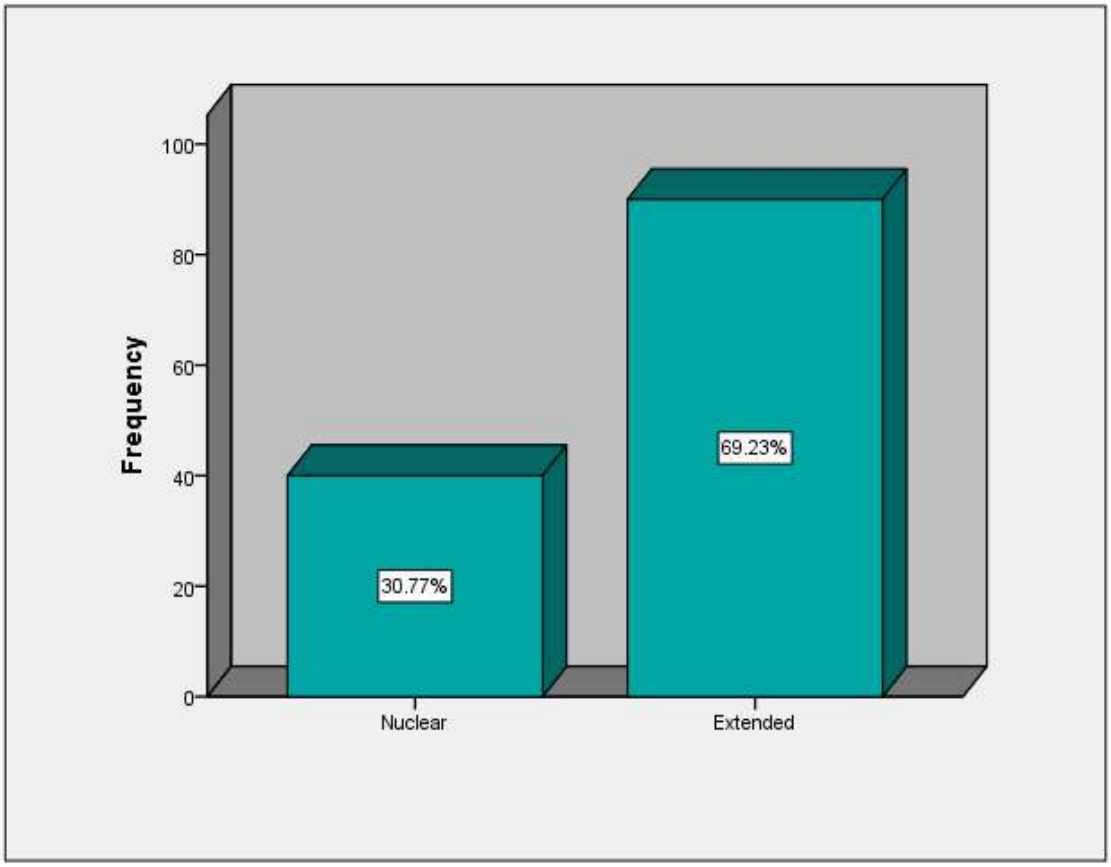


Figure no 2: Family type of the participants

The study revealed that, out of 130, 40 (30.77%) participants belonged to nuclear family and 90 (69.23%) participants belonged to extended family. (Figure no.2)

Frequency distribution of the participants by Marital status.

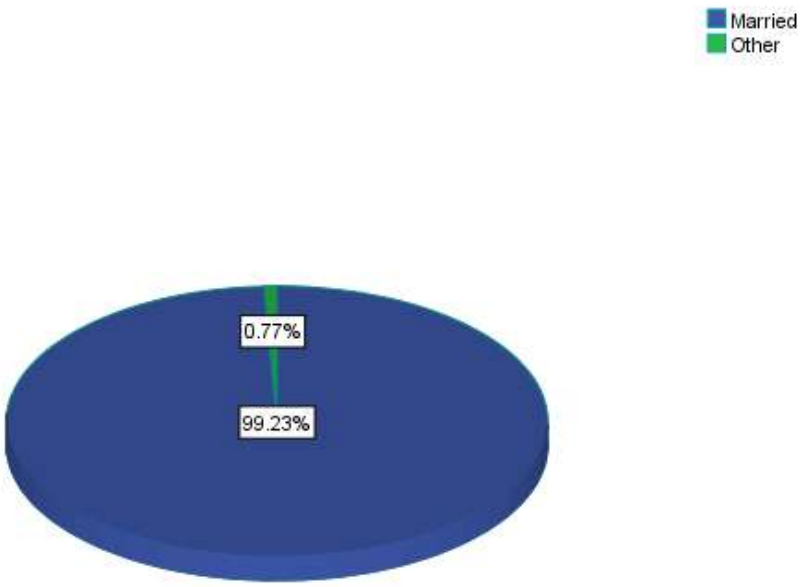


Figure no 3: Marital status of the participants

Regarding marital status, it was found that 129 (99.23%) participants were married and 1 (0.77%) participant were widow. (Figure no,3)

Frequency distribution of the participants by BMI.

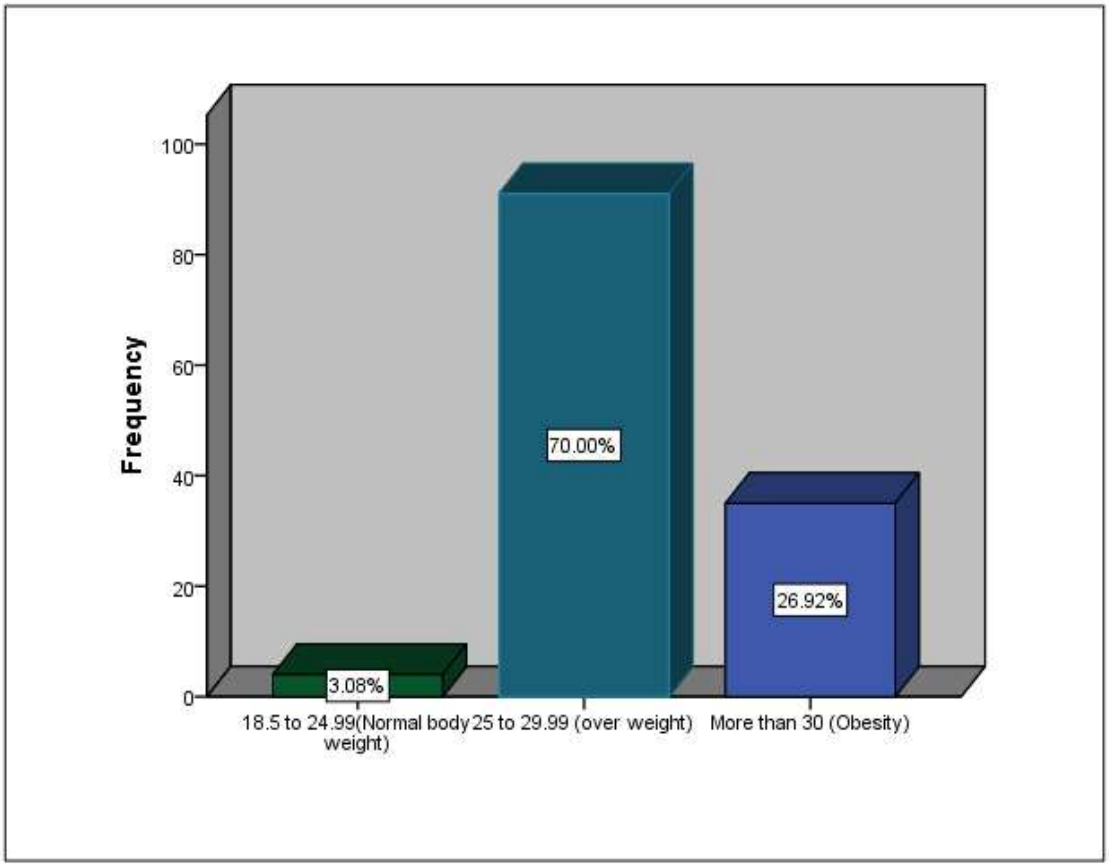


Figure no 4: Body mass index of the participant.

The study revealed that out of 130, 91 (70.00%) of participants was over weight (25-29.99), 35 (26.92%) participants were obese (>30) and 4 (3.08%) participants were normal weight (18.5- 24.99). it was not found under weight.

Frequency distribution of the participants by taking medication for osteoarthritis.

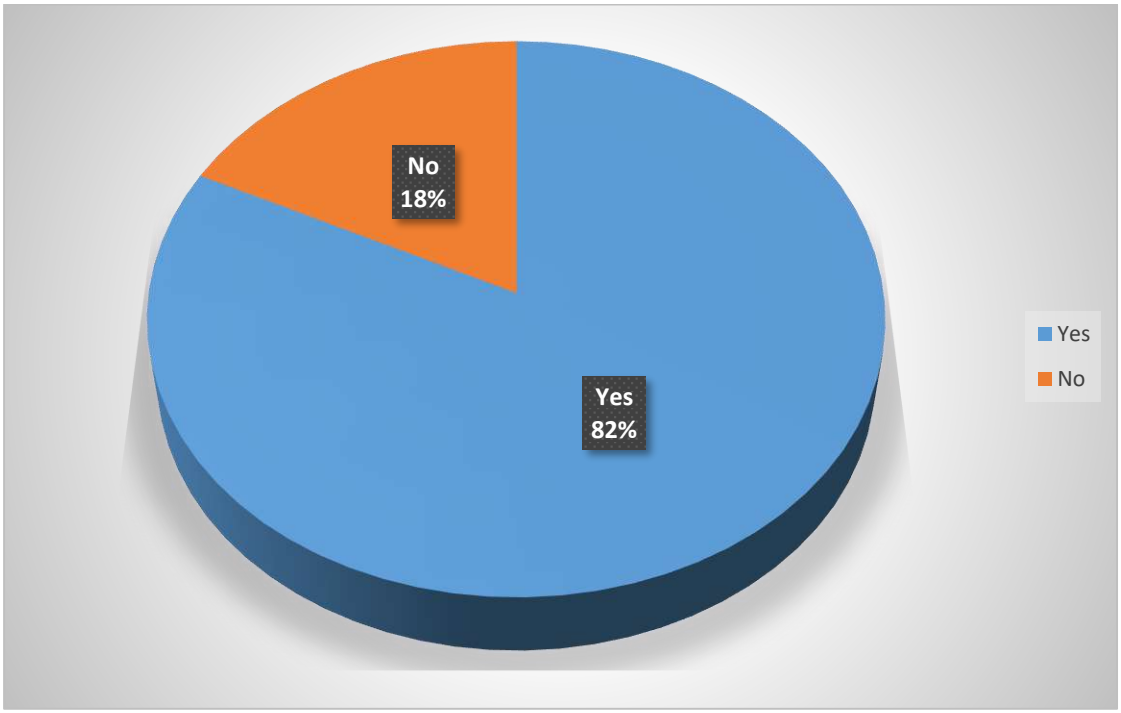


Figure no 5: Taking medication of the participant

Regarding taking medication for osteoarthritis, it was found that 107 (82%) participants were yes, means taking medication for osteoarthritis and 23 (18%) participants were no, means do not taking medication for osteoarthritis. (Figure no, 5).

Frequency distribution of the participants by Injury history.

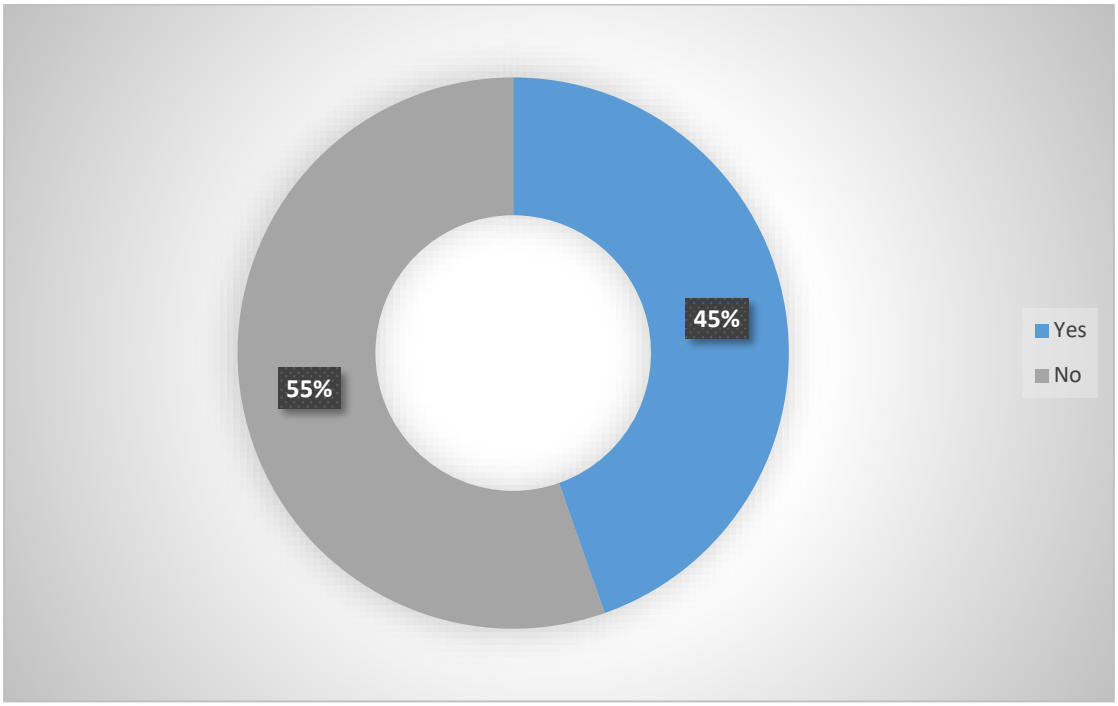


Figure no 6: Injury history of the participants

The study revealed that, out of 130, 58 (45%) participants had injury history yes, and 72 (55%) participants had injury history no. (Figure, 6)

Frequency distribution of the participants by affected side.

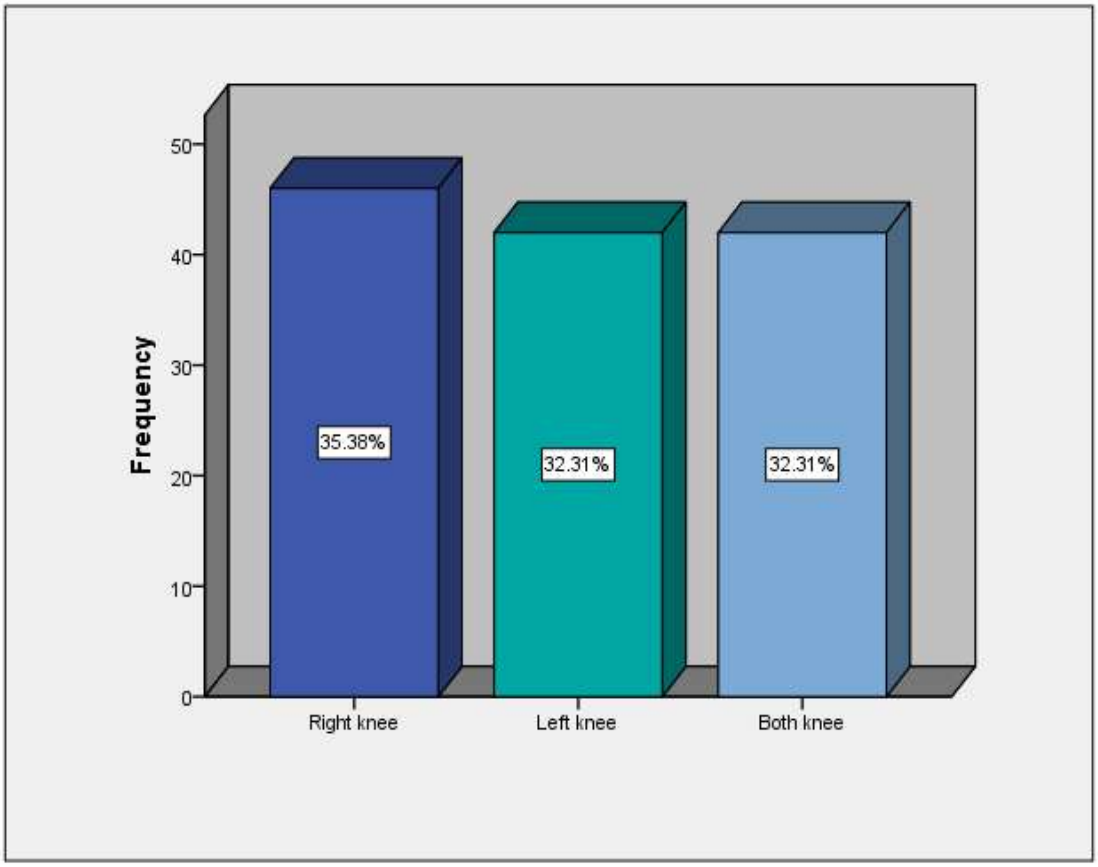


Figure no 7: Affected side of the participants

The study showed that the affected side of right knee of 46 (35.38%) participants was right knee affected, 42 (32.31%) participants was left knee affected and 42 (32.31%) participants was both knee affected. (Figure no: 7)

Frequency distribution of the participants by HTN (Hypertension).

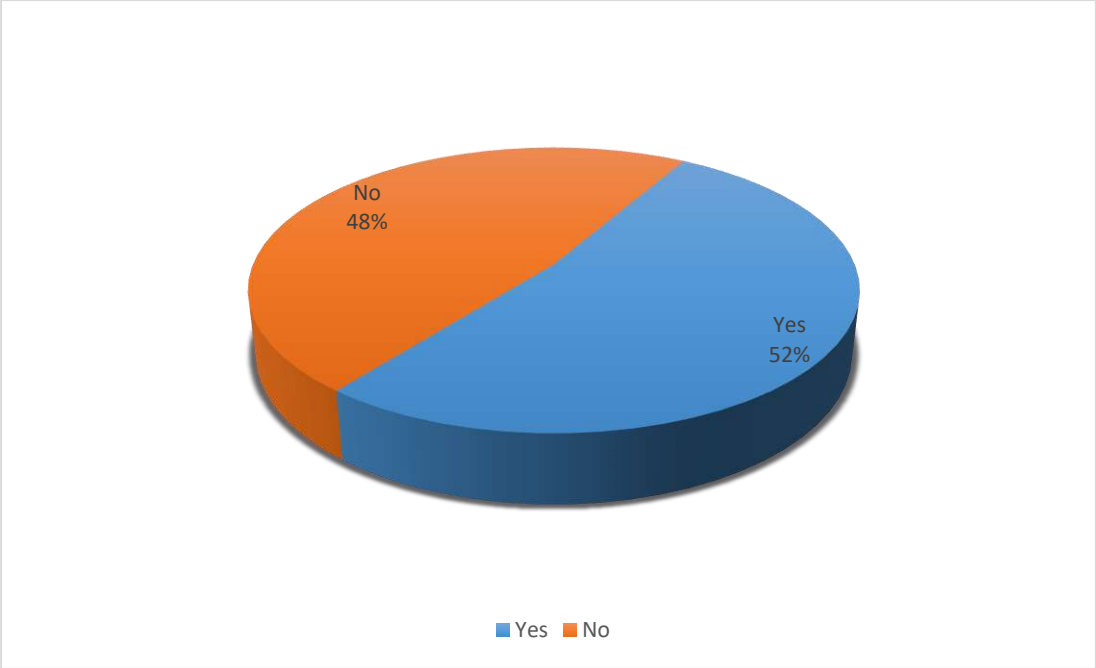


Figure no 8: HTN of the participants

Frequency distribution of the participants by HTN, it was found that 68 (52%) of participants was hypertension yes, and 62 (48%) of participants was no hypertension. (Figure no, 8)

Frequency distribution of the participants by DM (Diabetes mellitus).

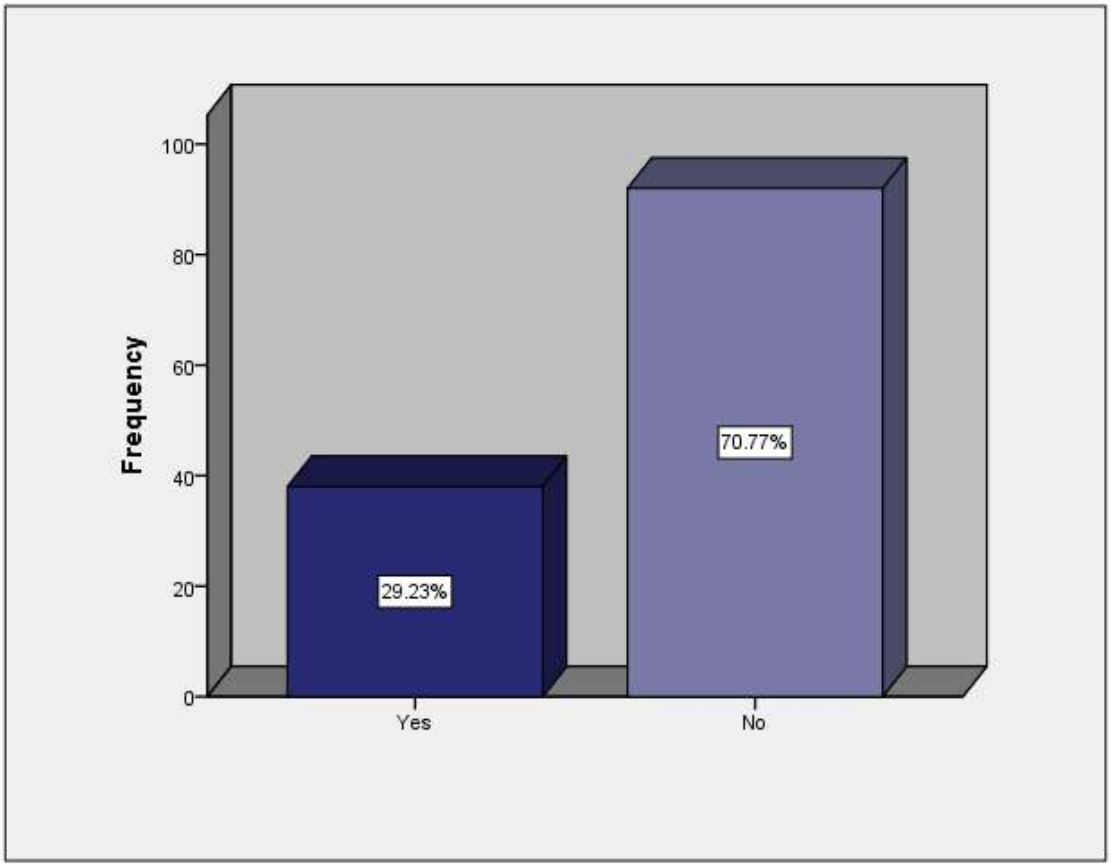


Figure no 9: Diabetes mellitus of the participants

Regarding diabetes mellitus, it was found that 38 (29.23%) of participants were diabetes mellitus yes, and 92 (70.77%) of participants were no diabetes mellitus. (Figure no, 9)

Frequency distribution of the participants by CVD (Cardio vascular disease).

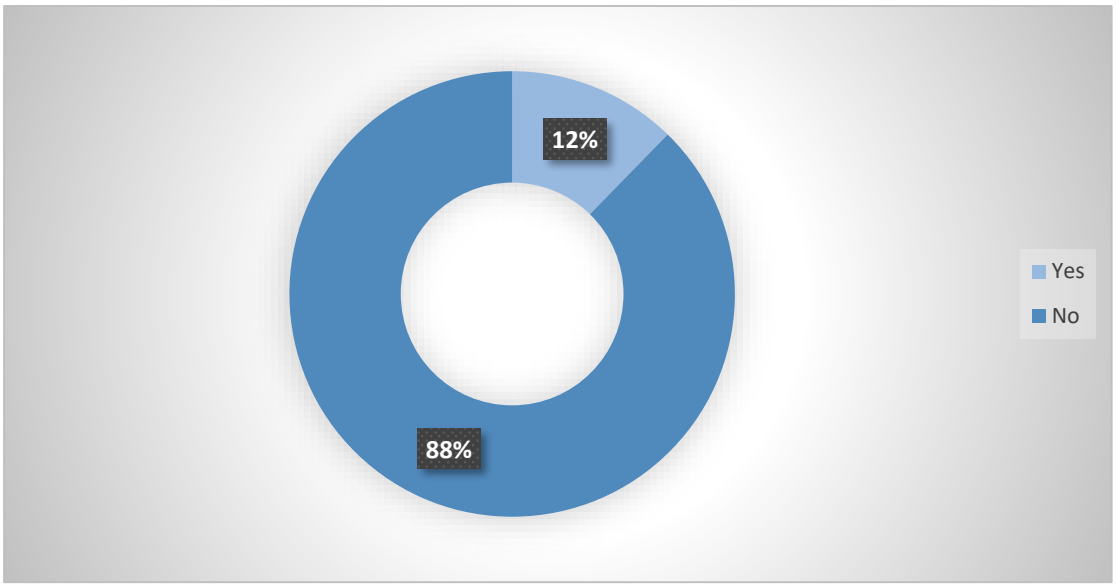


Figure no 10: Cardio vascular disease of the participants

Cardio vascular disease of participants, the study showed that 16 (12%) participants were cardio vascular disease yes, and 114 (88%) participants were no cardio vascular disease. (Figure no, 10)

Frequency distribution of the participants by pain.

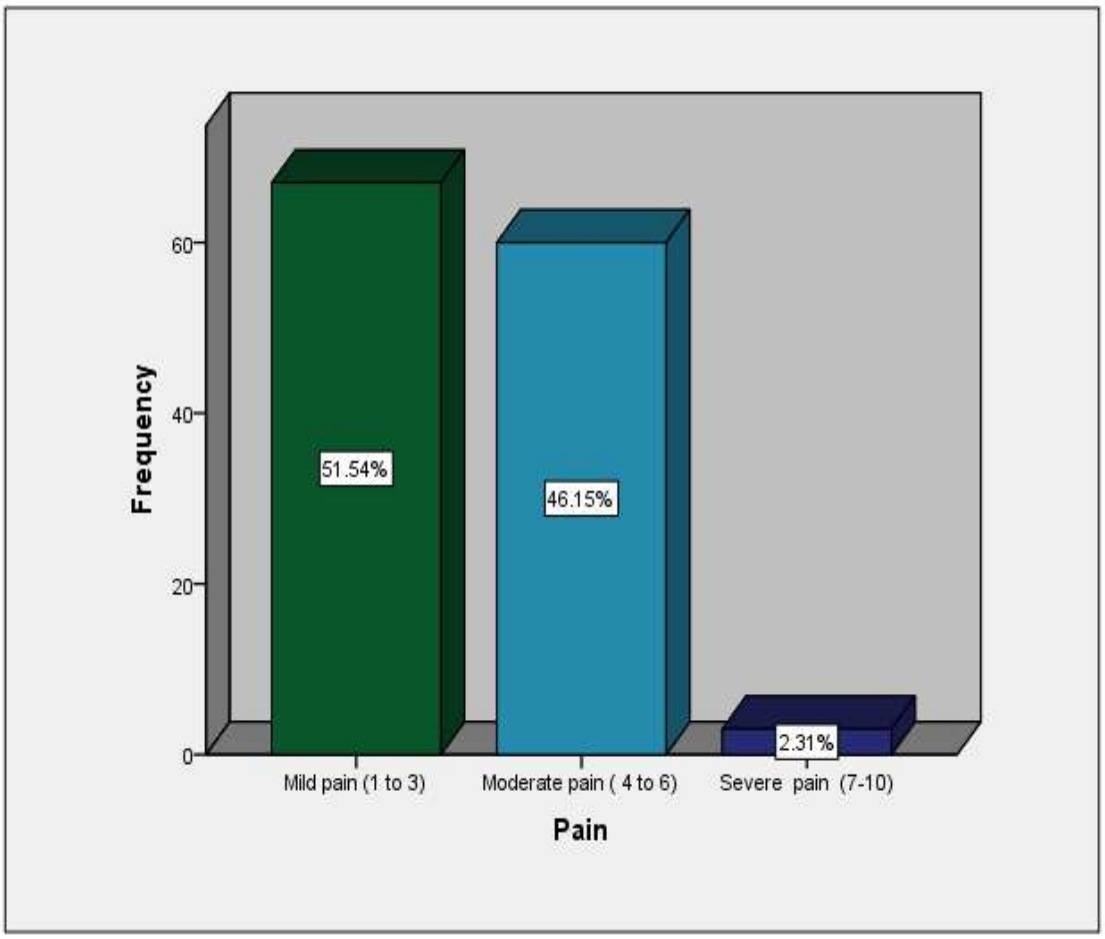


Figure no 10: Pain of the participants

Pain of participants, the study showed that 67 (51.54%) participants were mild pain (1-3), 60 (46.15%) participants were moderate pain (4-6) and 3 (2.31%) participants were severe pain (7-10) (Figure no, 11)

Table no 2: Quality of life of the participants.

Traits	Mean	Standard deviation
Physical functioning	33.03±3.712	3.712
Physical Health	40.83±4.573	4.573
Emotional problem	37.62±3.898	3.898
Energy	45.08±4.896	4.896
Emotional well being	38.05±3.977	3.977
Social functioning	41.62±4.619	4.619
Pain	32.74±3.638	3.638
General health	46.57±4.994	4.994

The table illustrates the mean and standard deviation for quality-of-life traits among patients with knee osteoarthritis, ranging from 0 (poor quality of life) to 100 (high quality of life). These results highlight the extensive impact of knee osteoarthritis on various domains of life, with significant challenges in physical, emotional, and social functioning. Physical functioning has a mean score of 33.03 & standard deviation 3.712 indicating severe limitations in performing daily activities due to pain, stiffness, and reduced mobility. The low standard deviation suggests minimal variability, with most participants experiencing similar levels of impairment. Physical health scored a mean of 40.83 & standard deviation 4.573 reflecting moderate challenges in overall physical well-being. Variability among participants suggests differences influenced by factors such as disease severity, comorbid conditions, or access to healthcare. Emotional health has a mean of 37.62 & standard deviation 3.898 indicating moderate psychological distress. Chronic pain, reduced independence, and fear of disease progression likely contribute to this distress. The moderate variability reflects differences in emotional resilience and coping mechanisms. Energy scored a mean of 45.08 & standard deviation 4.896 showing moderate fatigue levels. The relatively higher score compared to other domains suggests that some participants retain vitality for daily activities, with variability influenced by lifestyle, activity levels, and psychological factors. Emotional Well-Being scored a mean of 38.05 & standard deviation 3.977 indicating moderate impairments in mental health and happiness. Challenges like anxiety, frustration, or sadness may arise due to the chronic nature of osteoarthritis. The variability suggests

differences in emotional coping strategies and support systems. Social Functioning has a mean of 41.62 & standard deviation 4.619 the highest among all domains, indicating participants' moderate ability to maintain social interactions. Variability in this domain reflects differences in social support, family engagement, and individual adaptability. Pain scored a mean of 32.74 & standard deviation 3.638 highlighting the severe and consistent impact of pain on participants' quality of life, with minimal variability in reported pain levels. General health has a mean score of 46.57 & standard deviation 4.994 reflecting a moderate self-assessment of overall health. The variability suggests that individual factors such as comorbidities and access to healthcare influence general health perceptions.

Table no 3: Association between Age, Gender, BMI and SF-36

SF-36	Age		Gender		BMI	
	Chi-value	P-value	Chi-value	P-value	Chi-value	P-value
Physical functioning	68.655	0.061	16.161	0.241	24.222	0.563
Physical health	8.082	0.779	5.513	0.138	7.922	0.244
Emotional health	7.217	0.513	7.792	0.020*	4.331	0.363
Energy	22.830	0.741	3.660	0.818	13.800	0.465
Emotional well being	47.025	0.207	8.003	0.629	26.463	0.151
Social functioning	7.993	0.949	6.505	0.165	17.544	0.025*
Pain	22.371	0.557	12.931	0.044*	25.168	0.014*
General health	19.419	0.961	4.841	0.774	14.112	0.590

The chi-square analysis reveals significant and non-significant associations between age, gender, BMI, and various SF-36 quality-of-life domains among patients with knee osteoarthritis. Physical functioning, physical health, energy, emotional well-being, and general health show no significant associations with age, gender, or BMI, as all p-values exceed the threshold of 0.05. This indicates that these domains are not significantly influenced by these variables within the studied population. For emotional health, a significant association is observed with gender (p = 0.020*), suggesting that gender differences impact emotional well-being. However, no significant associations are found with age or BMI. Social functioning is significantly associated with BMI (p = 0.025*), highlighting that body mass index affects individuals' ability to engage in social activities. Gender and age do not show a significant impact on social functioning. Pain demonstrates significant associations with both gender (p = 0.044*) and BMI (p = 0.014*), indicating that these variables play a role in pain perception and its impact on quality of life, while age does not exhibit any significant relationship with pain.

CHAPTER V DISCUSSION & LIMITATION

The present study shows that percentage of quality of life of patients suffering from osteoarthritis. There about 130 peoples assess with the mean score for physical functioning is 33.03. The mean score for physical health is 40.83. The mean score for emotional health is 37.62. The energy trait has a mean of 45.08. Emotional well-being shows a mean score of 38.05. Social functioning has a mean score of 41.62. The mean score for pain is 32.74. General health has a mean of 46.57. The study of population made up of mainly female 53.85% and male 46.15%. This study found the age of the participants was in 35-45 years (29.2%). 46-55 years (40.00%),56-65 years (19.2%), 66-75 years (9.2%) and 76-85 years (2.3%) Maximum were in 46-55 years (40.00%), and small percentage 76-85 years (2.3%).

Another study was found that comprised forty healthy controls (30 female 10 male) and 112 patients with knee osteoarthritis (85 female, 27 male). The OA in the knee ages patients ranged in age from 45 to 76 (mean 59.90 ± 9.89 years old (Alkan et al., 2014).

In this study showed that living area of the participants Urban were maximum 93 (71.5%) Semi-urban were 9 (6.9%) and rural were 28 (21.5%) and there were most of the participants were presented by extended family type 90 (69.23%). In this study demonstrates that most of the female participants had occupations were housewife 54 (41.5%) and others 60 (46.2%). In this study result found of BMI most of the participants had 91 (70.00%) of participants was overweight 35 (26.92%) participants were obese. Several study found that most of the participants (60.7%) were lived in rural area and there family types was maximum were nuclear type of family 74 (49.33%) and also found that having BMI in range of 18.5-24.9 (Whittaker et al., 2015). Other study found that marital status was 45.2 % and their occupational status was retired 68.8%, in Korea survey there found that marital status was 99% were married and their BMI was mean score 24.05 (Mahmoudi et al., 2016).

In this study socio demographic characteristic of marital status of the participants were maximum married 99.23% and educational status of the participants were secondary educational level was 30% and other educational status were 23.1%. Also found this study their monthly income maximum answered was 10000-50000 money 83.8 % and their average income was 37613. Several study found that 42 (42.5 %) of the persons

had a married status. Forty (45.4 %) of the patients had only completed primary school, while sixty-seven (72 %) patients identified as Catholics (Araujo et al., 2016). Other study found that educational status was 40(43.0%) in elementary and middle was 37 (39.8%). This also found the marital status was married 42 (45.2 %) and single were 28 (30.1%) (Mahmoudi et al., 2016).

In this study showed that SF-36 scale for assess the quality of life with knee osteoarthritis. There were 8 domains of SF-36 scale and found this study there about 130 peoples assess with the mean score for physical functioning is 33.03. The mean score for physical health is 40.83. The mean score for emotional health is 37.62. The energy trait has a mean of 45.08. Emotional well-being shows a mean score of 38.05. Social functioning has a mean score of 41.62. The mean score for pain is 32.74. General health has a mean of 46.57. The data suggests variability across different health dimensions. Physical functioning and general health scores are relatively higher compared to pain and emotional health scores, indicating areas where participants feel more capable or maintain a more positive perception of their health. On the other hand, physical health and pain scores are lower, reflecting significant challenges that may require targeted interventions. Standard deviations for most traits are relatively small, indicating consistency in participants' experiences, particularly in areas like physical functioning and emotional health. However, traits like general health and social functioning show higher variability, suggesting diverse experiences within these domains. These findings emphasize the need for comprehensive strategies focusing on pain management, emotional support, and overall health improvement. Other study found that active participations in the SF-36 functional capacity domain received an average score of 37.1, functional limitation mean were 25.1, pain domain mean were 32.9. General health status mean were 54.6, energy 48.7, social aspect mean were 50.1, emotional aspect mean were 38.6 and mental health domain mean were 60.01. There were showed that patients with knee osteoarthritis have a low perception of there quality of life (Mahmoudi et al., 2016).

The chi-square analysis reveals significant and non-significant associations between age, gender, BMI, and various SF-36 quality-of-life domains among patients with knee osteoarthritis. Physical functioning, physical health, energy, emotional well-being, and general health show no significant associations with age, gender, or BMI, as all p-values exceed the threshold of 0.05. This indicates that these domains are not significantly

influenced by these variables within the studied population. For emotional health, a significant association is observed with gender (p = 0.020), suggesting that gender differences impact emotional well-being. However, no significant associations are found with age or BMI. Social functioning is significantly associated with BMI (p = 0.025), highlighting that body mass index affects individuals' ability to engage in social activities. Gender and age do not show a significant impact on social functioning. Pain demonstrates significant associations with both gender (p = 0.044) and BMI (p = 0.014), indicating that these variables play a role in pain perception and its impact on quality of life, while age does not exhibit any significant relationship with pain.

The SF-36 physical functioning p value 0.000*, role physical 0.000*, bodily pain 0.000*, vitality 0.000*, social function 0.000*, and mental health 0.001* subgroup scores showed statistically significant difference, according to another study (Alkan et al., 2014)

Another similar studies found that when contrasted, those identified as independent or dependent showed statistically significant differences across all functional categories of the SF-36 QOL scale. Functional ability (physical function) 0.001* showed the strongest link, followed by the domains of pain 0.001* (bodily discomfort) and mental health was 0.001* (Araujo et al., 2016).

5.1 Limitations of the study.

- Calculated sample size was 303. Data were collected from 130 patients suffering from knee osteoarthritis. It was of the study due to shortage of time. So generalizability could not be achieved in the study.
- During data collection some of the participants did not co-operate and some discontinue the interview this cause loss of participants in the research.
- Convenience sampling technique was applied to select the participants. This technique is non probability sampling process. So, the participants were not truly representative of the study population.
- The study area for the present study was Physiotherapy center in Dhaka. If would be better if responded could be included in the study from other district of Bangladesh.
- The researcher is a student of fourth year. This dissertation is first research work. This research work bears the evidence of in educate experience of the researcher.

CHEPTER VI CONCLUSION & RECOMENDATION

6.1 Conclusion

One of the primary causes of disability worldwide is osteoarthritis in the knee. One treatment option for the management of osteoarthritis-related symptoms that is minimally invasive is intra-articular hyaluronic acid. When the cartilage in your knee joint degrades and the bones begin to remove against one another, you have osteoarthritis of the knee. Your knee hurts from the friction, gets stiff, and occasionally swells. to assess the quality of life of Dhaka city patients suffering from osteoarthritis in their knees. It was a cross-sectional study of the descriptive kind. Due to limitations, I was only able to collect 130 patients out of the total sample size of 303. When it comes to pain and physical functionality, people with osteoarthritis perceive their quality of life as being low. The fact that those with less education engage in greater physical exertion and have greater impacts had a connection to this outcome.

6.2 Recommendation

The following recommendation have been made on the basis on the findings of the study.

1. Further research should be conducted to acquire knowledge on the factors related to knee osteoarthritis. It will help to prevent the osteoarthritis among the patients.
2. A well designed research should be carried out to get real picture of the situation covering more study area.
3. Random sampling should be applied to select the participants for ensuring the representativeness of the population.
4. Time for the present study was short. The researcher collected data from the participants for fifteen days. It was not sufficient for the study. The time for data collection should be two months would be effective for the quality study.

CHAPTER VII REFERENCE

Abramoff, B and Caldera, FE 2020, Osteoarthritis: pathology, diagnosis, and treatment options, *Medical Clinics*, vol. 104, no. 2, pp.293-311.

Ackerman, IN, Bennell, KL and Osborne, RH 2011, Decline in health-related quality of life reported by more than half of those waiting for joint replacement surgery, *BMC Musculoskeletal Disorders*, vol. 12, pp.1-9.

Ackerman, IN, Busija, L, Tacey, MA, Bohensky, MA, Ademi, Z, Brand, CA and L iew, D 2014, Performance of the assessment of quality of life measure in people with hip and knee joint disease and implications for research and clinical use, *Arthritis care & research, vol.* 66, no. 3, pp.481-488.

Alkan, BM, Fidan, F, Tosun, A and Ardıcoglu, O 2014, Quality of life and self-reported disability in patients with knee osteoarthritis, *Modern rheumatology*, vol. 24, no. 1, pp.166-171.

Avasthi, S, Sanghi, D, Singh, A, Kumar, A, Kumar, S, Misra, A and Srivastava, R 2019, Significance of clinical parameters and role of clinical scoring systems in predicting severity of primary osteoarthritis knee*, Int J Orthoped Surg*, vol. 13, pp.1-24.

Araujo, IL, Castro, MC, Daltro, C and Matos, MA 2016, Quality of life and functional independence in patients with osteoarthritis of the knee, *Knee surgery & related research,* vol. 28, no. 3, p.219-239.

Bakirhan, S, Bozan, O, Unver, B and Karatosun, V 2017, Evaluation of functional characteristics in patients with knee osteoarthritis, *Acta ortopedica brasileira*, vol. 25, no, 06, pp.248-252.

Batsis, JA, Zbehlik, AJ, Barre, LK, Mackenzie, TA and Bartels, SJ 2014, The impact of waist circumference on function and physical activity in older adults: longitudinal observational data from the osteoarthritis initiative, *Nutrition journal*, vol. 13, pp.1-13.

Blagojevic, M, Jinks, C, Jeffery, A and Jordan 2010, Risk factors for onset of osteoarthritis of the knee in older adults, *Osteoarthritis and cartilage*, vol. 18, pp.24-33.

Brazier, JE, Harper, R, Munro, J, Walters, SJ and Snaith, ML 2019, Generic and condition-specific outcome measures for people with osteoarthritis of the knee, *Rheumatology*, vol. *38*, no. 9, pp.870-877.

Brandt, KD, Heilman, DK, Slemenda, C, Katz, BP, Mazzuca, SA, Braunstein, EM and Byrd, DMBE 2019. Quadriceps strength in women with radiographically progressive osteoarthritis of the knee and those with stable radiographic changes, *The Journal of rheumatology*, vol. *26*, no. 11, pp.2431-2437.

Choojaturo, S, Sindhu, S, Utriyaprasit, K and Viwatwongkasem, C 2019, Factors associated with access to health services and quality of life in knee osteoarthritis patients: a multilevel cross-sectional study, *BMC health services research*, vol. 19, pp.1-7.

Christensen, R, Astrup, A and Bliddal, H 2015, Weight loss: the treatment of choice for knee osteoarthritis, *Osteoarthritis and Cartilage*, vol. 13, pp.20-27.

Ciombor, DM, Aaron, RK, Wang, S and Simon, B 2013, Modification of osteoarthritis by pulsed electromagnetic field a morphological study, *Osteoarthritis and Cartilage*, vol. 11, no. 6, pp.455-462.

Cross, M, Smith, E, Hoy, D, Nolte, S, Ackerman, I, Fransen, M, Bridgett, L, Williams, S, Guillemin, F, Hill, CL and Laslett, LL 2014, The global burden of hip and knee osteoarthritis, *Annals of the rheumatic diseases*, vol. 73, no. 7, pp.1323-1330.

Creamer, P, Lethbridge-Cejku, M and Hochberg, MC 2020, Factors associated with functional impairment in symptomatic knee osteoarthritis, *Rheumatology*, vol. *39*, no. 5, pp.490-496.

Donahue, SW 2018, Krogh's principle for musculoskeletal physiology and pathology, *Journal of musculoskeletal & neuronal interactions*, vol. 18, no. 3, pp.284-299.

Du, H, Chen, SL, Bao, CD, Wang, XD, Lu, Y, Gu, YY, Xu, JR, Chai, WM, Chen, J, Nakamura, H and Nishioka, K 2015, Prevalence and risk factors of knee osteoarthritis in Huang-Pu District, Shanghai, China, *Rheumatology International*, vol. 25, pp.585-590.

Dunlop, DD, Song, J, Semanik, PA, Sharma, L and Chang, RW 2011, Physical activity levels and functional performance in the osteoarthritis initiative, *Arthritis & Rheumatism,* vol. 63, pp.127-136.

Espinosa, R, Arce, A, Esquivel, JA, Alvarez, E, Vega, D, Torres, JF, Aguilera, JM, Toledo, V, Alcantar, E, Alderete, JA and Martinez, JL 2017, Risk factors associated to the quality of life of patients with osteoarthritis in Mexico, The impactar registry, *Osteoarthritis and Cartilage*, vol. *25*, pp.187-205.

Farr II, J, Miller, LE and Block, JE 2013, Quality of life in patients with knee osteoarthritis: a commentary on nonsurgical and surgical treatments, *The open orthopaedics journal*, vol. 7, pp.619-633.

Fingleton, C, Smart, K, Moloney, N, Fullen, BM and Doody, C 2015, Pain sensitization in people with knee osteoarthritis*, Osteoarthritis and cartilage*, vol. 23, no. 7, pp.1043-1056.

Foucher, KC, Chmell, SJ and Courtney, CA 2019, Duration of symptoms is associated with conditioned pain modulation and somatosensory measures in knee osteoarthritis, *Journal of Orthopaedic Research,* vol. 37, pp.136-142.

Georgiev, T and Angelov, AK 2019, Modifiable risk factors in knee osteoarthritis: treatment implications*, Rheumatology international*, vol. 39, no. 7, pp.1145-1157.

Grassel, S and Muschter, D 2020, Recent advances in the treatment of osteoarthritis, *F1000Research*, pp.29-59.

Graven-Nielsen, T, Wodehouse, T, Langford, RM, Arendt-Nielsen, L and Kidd, BL 2012, Normalization of widespread hyperesthesia and facilitated spatial summation of deep-tissue pain in knee osteoarthritis patients after knee replacement, *Arthritis & Rheumatism*, vol. 64, no. 9, pp.2907-2916.

Hansen, GR and Streltzer, J 2015, The psychology of pain, *Emergency Medicine Clinics, vol.* 23, no. 2, pp.339-348.

Haq, SA and Davatchi, F 2011, Osteoarthritis of the knees in the COPCORD world, *International journal of rheumatic diseases*, vol. 14, no. 2, pp.122-129.

Haq, SA, Davatchi, F, Dahaghin, S, Islam, N, Ghose, A, Darmawan, J, Chopra, A, Yu, ZQ, Dans, LF and Rasker, JJ 2015, Development of a questionnaire for identification of the risk factors for osteoarthritis of the knees in developing countries, *International journal of rheumatic diseases*, vol. 13, no. 3, pp.203-214.

Heijink, A, Gomoll, AH, Madry, H, Drobnic, M, Filardo, G, Espregueira-Mendes, J and Van Dijk, CN 2012, Biomechanical considerations in the pathogenesis of osteoarthritis of the knee, Knee Surgery, *Sports Traumatology, Arthroscopy*, vol. 20, pp.423-435.

Helminen, EE, Sinikallio, SH, Valjakka, AL, Vaisanen-Rouvali, RH and Arokoski, JP 2016, Determinants of pain and functioning in knee osteoarthritis, *Clinical rehabilitation*, vol. 30, no. 9, pp.890-900.

Herman, A, Chechik, O, Segal, G, Kosashvili, Y, Lador, R, Salai, M, Mor, A, Elbaz, A and Haim, A 2015, The correlation between radiographic knee OA and clinical symptoms do we know everything, *Clinical rheumatology*, vol. 34, pp.1955-1960.

Hermans, J, Koopmanschap, MA, Bierma-Zeinstra, SM, van Linge, JH, Verhaar, JA, Reijman, M and Burdorf, A 2012, Productivity costs and medical costs among working patients with knee osteoarthritis, *Arthritis care & research*, vol. 64, no. 6, pp.853-861.

Hodge, WA, Harman, MK and Banks, SA 2019, Patterns of knee osteoarthritis in Arabian and American knees, *The Journal of Arthroplasty*, 24, no. 3, pp.448-453.

Hunter, DJ, March, L and Chew, M 2020, Osteoarthritis in 2020 and beyond: a Lancet Commission, *The Lancet*, vol. 396, no. 10264, pp.1711-1712.

Hunter, DJ, Niu, J, Zhang, Y, Nevitt, MC, Xu, L, Lui, LY, Yu, W, Aliabadi, P, Buchanan, TS and Felson, DT 2015, Knee height, knee pain, and knee osteoarthritis, *Arthritis & Rheumatism*, vol. 52, no. 5, pp.1418-1423.

Hunter, DJ, Schofield, D and Callander, E 2014, The individual and socioeconomic impact of osteoarthritis, *Nature Reviews Rheumatology*, vol. 10, no. 7, pp.437-441.

Jhun, HJ, Sung, NJ and Kim, SY 2013, Knee pain and its severity in elderly Koreans: prevalence, risk factors and impact on quality of life, *Journal of Korean medical science*, vol. 28, no. 12, pp.1807-1821.

Jinks, C, Jordan, K, Ong, BN and Croft, P 2014, A brief screening tool for knee pain in primary care (KNEST), *Rheumatology*, vol. 43, pp.55-61.

Joshi, VL and Chopra, A 2019, Is there an urban-rural divide Population surveys of rheumatic musculoskeletal disorders in the Pune region of India using the COPCORD Bhigwan model, *The Journal of rheumatology*, vol. 36, no. 3, pp.614-622.

Kacar, C, Gilgil, E, Urhan, S, Arıkan, V, Dundar, U, Oksuz, MC, Sunbuloglu, G, Yıldırım, C, Tekeoglu, I, Butun, B and Apaydın, A 2015, The prevalence of symptomatic knee and distal interphalangeal joint osteoarthritis in the urban population of Antalya, Turkey, *Rheumatology international*, vol. 25, pp.201-204.

Kawano, MM, Araujo, IL, A, Castro, MC and Matos, MA 2015, Assessment of quality of life in patients with knee osteoarthritis, *Acta ortopedica brasileira*, vol. 23, pp.307-310.

Khan, A, Dickens, AP, Adab, P, and Jordan, RE, 2017, Self-management behaviour and support among primary care COPD patients, *NPJ primary care respiratory medicine*, vol. 27, pp.12-46.

Kinsella, K and He, W 2019, An Aging World: 2018, Washington, DC: US Government Printing Office; 2009, US Census Bureau. *International Population Reports*, PS95/09, pp.12- 21.

Krasnokutsky, S, Attur, M, Palmer, G, Samuels, J and Abramson, SB 2018, Current concepts in the pathogenesis of osteoarthritis, *Osteoarthritis and Cartilage*, vol. 16, pp.1-3.

Krishnan, Y and Grodzinsky, AJ 2018, Cartilage diseases, *Matrix Biology*, vol. 71, pp.51-69.

Lee, Y, Lee, SH, Lim, SM, Baek, SH and Ha, IH 2020, Mental health and quality of life of patients with osteoarthritis pain, *PLoS One*, vol. 15, no. 11, pp.24-77.

Lluch, E, Torres, R, Nijs, J and Van Oosterwijck, J 2014, Evidence for central sensitization in patients with osteoarthritis pain, *European journal of pain*, vol. 18, no. 10, pp.1367-1375.

Loeser, RF, Goldring, SR, Scanzello, CR and Goldring, MB 2012, Osteoarthritis: a disease of the joint as an organ, *Arthritis and rheumatism*, vol. 64, no. 6, pp.1678-1697.

Mahir, L, Belhaj, K, Zahi, S, Azanmasso, H, Lmidmani, F and El Fatimi, A 2016, Impact of knee osteoarthritis on the quality of life, *Annals of physical and rehabilitation medicine*, vol. 59, pp.135-159.

Mahmoudi, SF, Toulgui, E, Jeddou, KB, Gaddour, M, Jemni, S and Khachnaoui, F 2016, Quality of life for patient with knee osteoarthritis, *Annals of physical and rehabilitation medicine*, vol. 59, pp.158-159.

Martel-Pelletier, J, Maheu, E, Pelletier, JP, Alekseeva, L, Mkinsi, O, Branco, J, Monod, P, Planta, F, Reginster, JY and Rannou, F 2019, A new decision tree for diagnosis of osteoarthritis in primary care: international consensus of experts, *Aging clinical and experimental research*, vol. 31, pp.19-30.

Muraki, S, Oka, H, Akune, T, Mabuchi, A, En-Yo, Y, Yoshida, M, Saika, A, Suzuki, T, Yoshida, H, Ishibashi, H and Yamamoto, S 2019, Prevalence of radiographic knee osteoarthritis and its association with knee pain in the elderly of Japanese population, *Osteoarthritis and cartilage*, vol. 17, no. 9, pp.1137-1143.

Neogi, T 2013 The epidemiology and impact of pain in osteoarthritis, *Brazilian journal of physical therapy,* vol. 21, no. 9, pp.1145–1153.

Newman, J, Pydisetty, RV and Ackroyd, C 2019, Unicompartmental or total knee replacement, *The Journal of Bone & Joint Surgery British,* vol. 91, pp.52-57.

Patsika, G, Kellis, E and Amiridis, IG 2011, Neuromuscular efficiency during sit to stand movement in women with knee osteoarthritis*, Journal of Electromyography and Kinesiology*, vol. 21, no. 5, pp.689-694.

Pazzinatto, MF, de Oliveira Silva, D, Faria, NC, Simic, M, Ferreira, PH, de Azevedo, FM and Pappas, E 2019, What are the clinical implications of knee

crepitus to individuals with knee osteoarthritis, *Brazilian journal of physical therapy*, vol. 23, no. 6, pp.491-496.

Rezende, MUD, Campos, GCD and Pailo, AF 2013, Current concepts in osteoarthritis, Acta ortopedica brasileira, vol. 21, pp.120-122.

Roddy, E and Doherty, M 2016, Changing life-styles and osteoarthritis: what is the evidence, *Best practice & research Clinical rheumatology*, vol. 20, pp.81-97.

Santos, WTD, Rodrigues, EDC and Mainenti, MRM 2014, Muscle performance, body fat, pain and function in the elderly with arthritis, *Acta ortopedica brasileira*, vol. 22, pp.54-58.

Sarzi-Puttini, P, Cimmino, MA, Scarpa, R, Caporali, R, Parazzini, F, Zaninelli, A, Atzeni, F and Canesi, B 2015, August, Osteoarthritis: an overview of the disease and its treatment strategies, *In Seminars in arthritis and rheumatism*, Vol. 35, No. 1, pp. 1-10.

Scopaz, KA, Piva, SR, Wisniewski, S and Fitzgerald, GK 2019, Relationships of fear, anxiety, and depression with physical function in patients with knee osteoarthritis, *Archives of physical medicine and rehabilitation*, vol. 90, no. 11, pp.1866-1873.

Serban, O, Porojan, M, Deac, M, Cozma, F, Solomon, C, Lehghel, M, Micu, M and Fodor, D 2016, Pain in bilateral knee osteoarthritis–correlations between clinical examination, radiological, and ultrasonographical findings. Medical ultrasonography, vol. 18, no.3, pp. 318-325.

Sharma, A, Kudesia, P, Shi, Q and Gandhi, R 2016, Anxiety and depression in patients with osteoarthritis, *research and reviews*, pp.103-113.

Shrestha, R 2018, Quality of life of patients with knee osteoarthritis, *Journal of Patan Academy of Health Sciences,* vol. 5, no. 2, pp.81-84.

Skou, ST, Graven-Nielsen, T, Lengsoe, L, Simonsen, O, Laursen, MB and Arendt-Nielsen, L 2013, Relating clinical measures of pain with experimentally assessed pain mechanisms in patients with knee osteoarthritis, *Scandinavian journal of Pain*, vol. 4, no. 2, pp.111-117.

Somers, TJ, Keefe, FJ, Godiwala, N and Hoyler, GH 2019, Psychosocial factors and the pain experience of osteoarthritis patients, *Current opinion in rheumatology*, vol. 21, no. 5, pp.501-506.

Suchting, R, Colpo, GD, Rocha, NP and Ahn, H 2020, The effect of transcranial direct current stimulation on inflammation in older adults with knee osteoarthritis, *Biological Research for Nursing*, vol. 22, pp.57-63.

Sutbeyaz, ST, Sezer, N, Koseoglu, BF, Ibrahimoglu, F and Tekin, D 2017, Influence of knee osteoarthritis on exercise capacity and quality of life in obese adults, Obesity, vol. 15, no. 8, pp.2071-2076.

Tangtrakulwanich, B and Suwanno, P 2012, Epidemiology and risk factors of patellofemoral osteoarthritis in adults, *Journal of the Medical Association of Thailand,* vol. 95, no. 8, pp.1048-1075.

Tavares, DRB, Trevisani, VFM, Okazaki, JEF, de Andrade Santana, MV, Pinto, ACPN, Tutiya, KK, Gazoni, FM, Pinto, CB, Dos Santos, FC and Fregni, F 2020, Risk factors of pain, physical function, and health-related quality of life in elderly people with knee osteoarthritis, *Heliyon*, vol. 6, no. 12, pp.123-145.

Tavares, DRB, Trevisani, VFM, Okazaki, JEF, de Andrade Santana, MV, Pinto, ACPN., Tutiya, KK, Gazoni, FM, Pinto, CB, Dos Santos, FC and Fregni, F 2020, Risk factors of pain, physical function, and health-related quality of life in elderly people with knee osteoarthritis, *Heliyon*, vol. 6, no. 12, pp. 232-260.

Van der Kraan, PM 2012, Osteoarthritis year 2012 in review, biology, *Osteoarthritis and Cartilage,* vol. 20, no. 12, pp.1447-1450.

Walsh, L, Hill, S, Wluka, AE, Brooks, P, Buchbinder, R, Cahill, A, Dans, LF, Lowe, D, Taylor, M and Tugwell, P 2016, Harnessing and supporting consumer involvement in the development and implementation of Models of Care for musculoskeletal health, *Best practice & research Clinical rheumatology*, vol. 30, no. 3, pp.420-444.

Ware, JE, Kosinski, M and Keller, S 2011, SF-36 physical and mental health summary scales, *A user's manual*, pp. 1987-*1994*.

Woo, J, Lau, E, Lee, P, Kwok, T, Lau, WC, Chan, C, Chiu, P, Li, E, Sham, A and Lam, D 2016, Impact of osteoarthritis on quality of life in a Hong Kong Chinese population, *The Journal of rheumatology,* vol. 31, no. 12, pp.2433-2438.

Wluka, A, Chou, L, Briggs, AM and Cicuttini, F 2016, Understanding the needs of consumers with musculoskeletal conditions, *a systematic scoping review*, vol. 43, pp.234-255.

Yan, H, Guo, J, Zhou, W, Dong, C and Liu, J 2022, Health-related quality of life in osteoarthritis patients*, Psychology, Health & Medicine*, vol. 27, no. 8, pp.1859-1874.

Yildiz, N, Topuz, O, Gungen, GO, Deniz, S, Alkan, H and Ardic, F 2010, Health-related quality of life in knee osteoarthritis, *Rheumatology international,* vol. 30, pp.1595-1600.

Zhang, Y and Jordan, JM 2018, Epidemiology of osteoarthritis. *Rheumatic Disease Clinics of North America,* vol. 34, no. 3, pp.515-529.

Zhao, T, Ahmad, H, Winzenberg, T, Aitken, D, Graaff, BD, Jones, G and Palmer, AJ 2021, temporal differences in health-related quality of life of People with and without osteoarthritis, *Rheumatology*, vol. 60, no. 7, pp.3352-3359.

APPENDIX-I

SCMST-BPT/IRB/05-23/022

To
Syful islam
4th Year Student of B.Sc. in Physiotherapy
Session: 2018-2019, Reg No:10472
SAIC College of Medical Science & Technology (SCMST)
Mirpur-14, Dhaka-1216, Bangladesh

Subject: Approval of the thesis proposal **"Evaluating Quality of Life Among the Patients with Knee Osteoarthritis"** by ethics committee.

Dear , Syful islam
Congratulations.
The Institutional Review Board (IRB) of SCMST has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the principal investigator. The Following documents have been reviewed and approved:

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

The purpose of the study is to determine the **Evaluating Quality of Life Among the Patients with Knee Osteoarthritis.** The study involves face to face interview by using semi-structured questionnaire to explore the Evaluating Quality of Life Among the Patients with Knee Osteoarthritis that may take 15 to 20 minutes to fill in 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 09.00 AM on 28th September 2023 at SCMST.

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

Best regards,

29.05.24

Dr. Abul Kasem Mohammad Enamul Haque
Principal, SCMST &Chairman, Institutional Review Board (IRB)
SAIC College of Medical Science & Technology (SCMST)
Mirpur-14, Dhaka-1216, Bangladesh

APPENDIX-II

5th June 2024

To

The Clinical Head

SAIC college of medical science and technology outdoor service

Mirpur-10, Dhaka,

Subject: Prayer for permission to collect data from SAIC College of Medical Science and Technology outdoor service to conduct a research project.

Sir,

With due respect and humble submission to state that I am a student of B.Sc. in Physiotherapy at SAIC College of Medical Science and Technology (SCMST). As a part of our course curriculum, we have to conduct a research project for the partial fulfillment of the requirement for the degree of B.Sc. in Physiotherapy. My research title is **"Evaluation of Quality of Life Among Patients with Knee Osteoarthritis"** and the aim of the study evaluation of quality of life patients with knee osteoarthritis. This is a cross sectional study under the supervision of Md. Shahidul islam Assistant Professor and Clinical Head. I have chosen the Saic outdoor service as a site of data collection.

So, I, therefore, pray and hope that you would be kind enough to give permission for data collection that will help me to complete my study.

Yours Faithfully

Syful islam

Student of B.Sc. in Physiotherapy

Session: 2018 -2019

Reg No: 10472

SAIC College of Medical Science and Technology (SCMST)

Mirpur-14, Dhaka 1216, Bangladesh.

Promitted to Collect Data from Saic Outdoo

Md. Shahidul Islam
Physio BSPT, MSPT (DU)
Manual Therapy (India)
Assistant Professor
Physiotherapy Dept. SCMST.

APPENDIX-III

06th june 2024

To

The Chairman

Unique Pain and Paralysis Centre (UPPC)

Mirpur-11, Dhaka

Subject: Prayer for permission to collect data from the Unique Pain and Paralysis Centre (UPPC) to conduct a research project.

Sir,

With due respect and humble submission to state that I'm a student of B.Sc in Physiotherapy at Saic College of Medical Science and Technology. My research title is **"Evaluating Quality of life Among the patient with Knee Osteoarthritis"** and the aim of the study is to identify the evaluating quality of life among the patient with knee osteoarthritis. This is a cross sectional study under the supervision of Md. Shahidul Islam, Assistance professor and clinical head of SCMST. I have chosen the Unique Pain and Paralysis Centre to collect data from osteoarthritis patients who will come UPPC for Physiotherapy treatment.

So, I, therefore and hope that you would be kind enough to give me permission for data collection that will help me to complete my study.

Yours Faithfully

Syful islam

B.Sc in Physiotherapy (4th year student)

Session: 2018-2019

SCMST,Mirpur,Dhaka-1216

Asst. Prof. Dr. Md. Farugul Islam, PT
MSc, Physio (DU) CRP, PGT-BT, Bobath (UK)
Manual Therapy (Joint Pain), India
Head Physiotherapy Dept. CRP-Mirpur (Ex.)

APPENDIX-IV

10th June 2024

To

The Managing Director,

Academy of physiotherapy pain and rehabilitation center

Mirpur 10, Dhaka.

Subject: Prayer for permission to collect data from Academy of Physiotherapy Pain and Rehabilitation Center to conduct a research project.

Sir,

With due respect and humble submission to state that, i am a student of B.Sc in Physiotherapy at Saic College of Medical Science and Technology (SCMST). As a part of our course curriculum, we have to conduct a research project for the partial fulfillment of the requirement for the degree of B.Sc. in Physiotherapy. My research title is **"Evaluating Quality of Life Among the Patient with Knee Osteoarthritis"** and the aim of the study is to identify the evaluating quality of life among the patients with knee osteoarthritis. This is a cross sectional study under the supervision of Md Shahidul islam assistance professor and clinical head. I have chosen the academy of physiotherapy pain and rehabilitation center as a site of data collection.

So, I therefore, pray and hope that you would be kind enough to give permission for data collection that will help me to complete my study.

Yours Faithfully

Allowed to collect data with maintaining of all research ethics.

10.06.2024

Assoc. Prof. S.M. Muslim Kamal
MDUR, MPH, BPT(CRP-BNPI,DU)
Pain Arthritis, Paralysis, Physiotherapy &
Disability Management Specialist
Academy of Physiotherapy
Section-10, Mirpur, Dhaka-1216

Syful islam

Student of B.Sc. in Physiotherapy

Session: 2018 -2019

Reg No: 10472

SAIC College of Medical Science and Technology (SCMST)

Mirpur-14, Dhaka 1216, Bangladesh.

APPENDIX-V

Consent form

Assalamu alaikum / Namaskar

My name is Syful islam. 4th year Student of B.sc in physiotherapy at Saic college of medical science and technology. My study entitled Use of **"Evaluation of Quality of Life Among Patients with Knee Osteoarthritis".** I would like to know about some personal and other related information. You will answer some question which are mentioned in this from. This will take 15 to 20 minutes. I would like to inform you that this is purely professional study and not to be use other purpose. The researchers is not directly related with this obstetrics area, so your participation in the research will have no impact on your present or future treatment. All information provide by you will be treated as confidential and in the event of any report or publication it will be ensure that the source of information remain anonymous. Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequence. You also have the write not to answer a particular question that you don't like or don't want to answer during interview. If you have any query about the study or your right as a participant, you may contract with my supervisor Md. Shahidul Islam Assistant Professor & Clinical head Department of Physiotherapy SAIC College of Medical Science and Technology (SCMST Dhaka1216)

Do you have any question before i start?

Some may i have your consent to proceed the interview

☐ Yes

☐ No

Signature of interviewer……Date……..

Signature of data collector……..Date……

Signature of witness……Date……

APPENDIX-VI

QUESTIONNAIRE (English)

Evaluating quality of life among the patients with knee osteoarthritis.

Part:1(personal information)

1.1 Code no…….

1.2 Participant name:……

1.3 Address……

1.4 Date……

1.5 Mobile……

Part:2 sociodemographic information.

Q.N	Question	Ans.
2.1	What is your age?	
2.2	What is your gender?	1.Male 2.Female 3. Other
2.3	Where do you live?	1.Urban 2.Semi urban 3.Rural
2.4	What type of your family?	1.Nuclear 2.Extended
2.5	What is your occupation?	1.Businessman

		2.Farmer 3.Housewife 4.Other
2.6	What is your marital status	1.Married. 2.Unmarried 3.Other.
2.7	What is your educational qualification?	1.Illiterate 2. Primary 3. Secondary 4. Higher secondary 5. Others.
2.8	What about your family income monthly?	

Part:3 Topic related question(Medical information)

Q.N	Question	Answer
3.1	BMI	1.Height in……..inch 2.Weight in ……..kg
3.2	Are you taking any medication for OA?	1.Yes 2.No
3.3	Do you have any injury history?	1.Yes 2.No
3.4	Which side are affected?	1. Right 2. Left

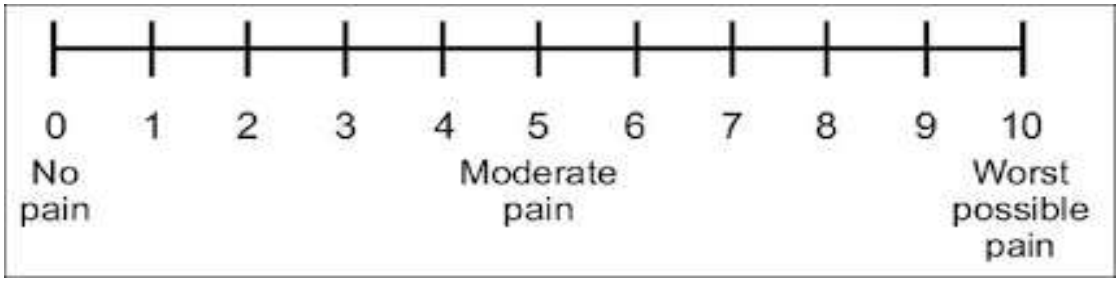
Co-morbitity Factor

3.5	Do you have hypertension?	1.Yes 2.No
3.6	Do you have DM?	1.Yes 2.No
3.7	Do you have heart disease?	1.Yes 2.No

3.8 How severe is your pain?

VAS Scale

pain



Part: 4 Scale

SF36 Scale

Please answer the 36 questions of the Health Survey completely, honestly, and without interruptions.

GENERAL HEALTH:

Q.N	Question	Answer
4.1	In general, would you say your health is?	1.Excellent 2.Very Good 3.Good 4.Fair 5.Poor

4.2	Compared to one year ago, how would you rate your health in general now?	1.Much better now than one year ago 2.Somewhat better now than one year ago 3.About the same 4.Somewhat worse now than one year ago 5.Much worse than one year ago

LIMITATIONS OF ACTIVITIES:

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much.

Q.N	Question	Answer
4.3	Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all
4.4	Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all
4.5	Lifting or carrying groceries	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all
4.6	Climbing several flights of stairs	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all
4.7	Climbing one flight of stairs	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all

4.8	Bending, kneeling, or stooping	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all
4.9	Walking more than a mile	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all
4.10	Walking several blocks	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all
4.11	Walking one blocks	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all
4.12	Bathing or dressing yourself	1.Yes, Limited a lot 2.Yes, Limited a Little 3.No, Not Limited at all

PHYSICAL HEALTH PROBLEMS

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

Q.N	Question	Answer
4.13	Cut down the amount of time you spent on work or other activities	1.Yes 2.No
4.14	Accomplished less than you would like	1.Yes 2.No

4.15	Were limited in the kind of work or other activities	1.Yes 2.No
4.16	Had difficulty performing the work or other activities (for example, it took extra effort	1.Yes 2.No

EMOTIONAL HEALTH PROBLEMS:

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

Q.N	Question	Answer
4.17	Cut down the amount of time you spent on work or other activities	1.Yes 2.No
4.18	Accomplished less than you would like	1.Yes 2.No
4.19	Didn't do work or other activities as carefully as usual	1.Yes 2.No

SOCIAL ACTIVITIES

Q.N	Question	Answer
4.20	Emotional problems interfered with your normal Social activities with family, friends, neighbor or group	1.Not at all 2.slightly 3. Moderately

		4. Severe 5.Very severe

PAIN:

Q.N	Question	Answer
4.21	How much bodily pain gave you had during the past 4 weeks?	1.None 2.Very mild 3.Mild 4.Moderate 5.Severe 6.Very Severe
4.22	During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and house work)	1.Not at all 2.A little bit 3.Moderately 4.Quite a bit 5.Extremely

ENERGY AND EMOTIONS:

These questions are about how you feel and how things have been with you during the 4weeks. For each question, please give the answer that comes closest to the way you gave been feeling.

Q.N	Question	Answer
4.23	Did you feel full of pep?	1.All of the time 2.Most of the time 3.A good bit of the time 4.Some of the time 5.A little bit of the time 6.None of the time

4.24	Have you been a very nervous person?	1.All of the time 2.Most of the time 3.A good bit of the time 4.Some of the time 5.A little bit of the time 6.None of the time
4.25	Have you felt so down in the dumps that Nothing could cheer you up?	1.All of the time 2.Most of the time 3.A good bit of the time 4.Some of the time 5.A little bit of the time 6.None of the time
4.26	Have you felt calm and peaceful?	1.All of the time 2.Most of the time 3.A good bit of the time 4.Some of the time 5.A little bit of the time 6.None of the time
4.27	Did you have a lot of energy?	1.All of the time 2.Most of the time 3.A good bit of the time 4.Some of the time 5.A little bit of the time 6.None of the time
4.28	Have you felt downhearted blue?	1.All of the time 2.Most of the time 3.A good bit of the time 4.Some of the time 5.A little bit of the time 6.None of the time
4.29	Did you feel warm out?	1.All of the time 2.Most of the time

		3.A good bit of the time 4.Some of the time 5.A little bit of the time 6.None of the time
4.30	Have you been happy person?	1.All of the time 2.Most of the time 3.A good bit of the time 4.Some of the time 5.A little bit of the time 6.None of the time
4.31	Did you feel tried?	1.All of the time 2.Most of the time 3.A good bit of the time 4.Some of the time 5.A little bit of the time 6.None of the time

SOCIAL ACTIVITIES

Q.N	Question	Answer
4.32	During the past 4weeks, how much of the time has your physical health or emotional problems interfered with your social (like visiting with friends, relatives, etc.)?	1.Most of the time 2.A good bit of the time 3.Some of the time 4.A little bit of the time 5. None of the time

GENERAL HEALTH:

How true or false is each of the following statements for you?

Q.N	Question	Answer
4.33	I seem to get sick a little easier than other people.	1.Definitely true 2.Mostly true 3.Don't know 4. Mostly false 5.Definitely false
4.34	I am healthy as anybody know.	1.Definitely true 2.Mostly true 3.Don't know 4. Mostly false 5.Definitely false
4.35	I expect my health to get worse.	1.Definitely true 2.Mostly true 3.Don't know 4. Mostly false 5.Definitely false
4.36	My health is excellent.	1.Definitely true 2.Mostly true 3.Don't know 4. Mostly false 5.Definitely false

APPENDIX-VII

সম্মতি পত্র

আসসালামু আলাইকুম/ নমস্কার

আমার নাম সাইফুল ইসলাম। আমি সাইক কলেজ অব মেডিকেল সায়েন্স অ্যান্ড টেকনোলজিতে বি,এসসি ফিজিওথেরাপির ৪র্থ বর্ষের ছাত্র। আমার গবেষণার শিরোনাম **"হাঁটুতে অস্টিওআর্থারাইটিস রোগীদের জীবনযাত্রার মান মূল্যায়ন।"**। আমি কিছু ব্যক্তিগত এবং অন্যান্য সম্পর্কিত তথ্য সম্পর্কে জানতে চাই। আপনি কিছু প্রশ্নের উত্তর দেবেন যা এখানে উল্লেখ করা হয়েছে। এর জন্য ১৫ থেকে ২০ মিনিট সময় লাগবে। আমি আপনাকে জানাতে চাই যে এটি সম্পূর্ণরূপে পেশাদার অধ্যয়ন এবং অন্য উদ্দেশ্যে ব্যবহার করা হবে না। গবেষকরা সরাসরি এই বিভাগের সাথে সম্পর্কিত নয়, তাই গবেষণায় আপনার অংশগ্রহণ আপনার বর্তমান বা ভবিষ্যতের চিকিৎসার উপর কোন প্রভাব ফেলবে না। আপনার থেকে নেওয়া সমস্ত তথ্য গোপনীয় হিসাবে বিবেচিত হবে এবং কোনও প্রতিবেদন প্রকাশের ক্ষেত্রে এটি নিশ্চিত করা হবে যে তথ্যের উত্স নামবিহী থাকবে। এই অধ্যয়নে আপনার অংশগ্রহণ স্বেচ্ছায় এবং আপনি এই অধ্যয়নের যে কোন সময় নিজেকে প্রত্যাহার করতে পারেন। সাক্ষাত্কারের সময় আপনি পছন্দ করেন না বা উত্তর দিতে চান না এমন প্রশ্নের উত্তর আপনি চাইলে এড়িয়ে যেতে পারবেন। অংশগ্রহণকারী হিসাবে এই বিষয় সম্পর্কে আপনার কোন প্রশ্ন থাকলে, আপনি আমার সুপারভাইজার মোঃ শহীদুল ইসলাম সহকারী অধ্যাপক ও ফিজিওথেরাপি বিভাগের ক্লিনিক্যাল প্রধানের সাথে যোগাযোগ করতে পারেন। যোগাযোগের ঠিকানা সাইক কলেজ অফ মেডিকেল সায়েন্স অ্যান্ড টেকনোলজি ঢাকা ১২১৬

আমি শুরু করার আগে আপনার কোন প্রশ্ন আছে?

সাক্ষাতকারটি চালিয়ে যাওয়ার জন্য আমি কি আপনার সম্মতি পেতে পারি?

☐ হ্যাঁ

☐ না

ইন্টারভিউয়ারের নাম.....তারিখ.....

তথ্য সংগ্রহকারীর স্বাক্ষর.....তারিখ.....

সাক্ষীর স্বাক্ষর .....তারিখ.....

APPENDIX-VIII

প্রশ্নপত্র (বাংলা)

হাঁটুতে অস্টিওআর্থারাইটিস রোগীদের জীবনযাত্রার মান মূল্যায়ন।

পর্ব:১(ব্যক্তিগত তথ্য)

১.১ কোড নং.....

১.২ অংশগ্রহণকারীর নাম:.....

১.৩ ঠিকানা .....

১.৪ তারিখ.....

১.৫ মোবাইল.....

পর্ব:২. সামাজিক জনসংখ্যা সংক্রান্ত তথ্য।

প্রশ্ন নং	প্রশ্ন	উত্তর
২.১	আপনার বয়স কত?	.....বছর
২.২	আপনার লিঙ্গ কি?	১। পুরুষ ২।মহিলা ৩। অন্যান্য
২.৩	আপনি কোথায় থাকেন?	১।শহরে ২। উপ শহরে ৩। গ্রামে
২.৪	আপনার পরিবার কি ধরনের?	১।ছোট ২।সম্প্রসারিত ৩।অন্যান্য
২.৫	আপনার পেশা কি?	১।ব্যবসায়ী ২।কৃষক ৩।গৃহিণী ৪। অন্যান্য

২.৬	আপনার বৈবাহিক অবস্থা কি?	১।বিবাহিত। ২।অবিবাহিত। ৩।অন্যান্য।
২.৭	আপনার শিক্ষাগত যোগ্যতা কি?	১।নিরক্ষর ২।প্রাথমিক ৩। মাধ্যমিক ৪।উচ্চ মাধ্যমিক ৫। অন্যান্য।
২.৮	আপনার পরিবারের মাসিক আয় কত?	

পর্ব:৩ বিষয় সম্পর্কিত প্রশ্ন (চিকিৎসা সংক্রান্ত তথ্য)

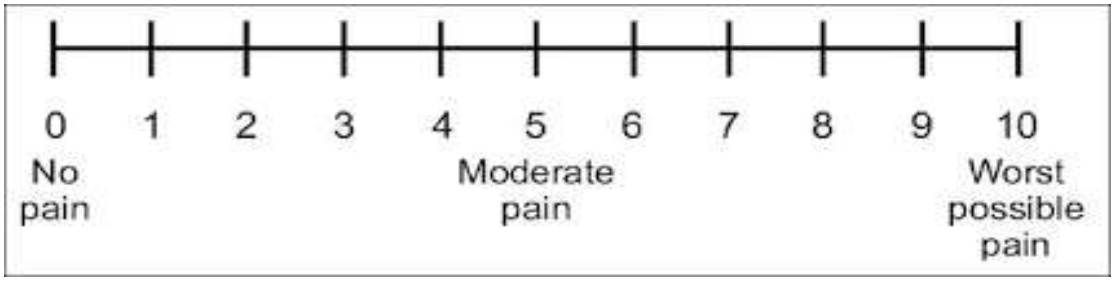
প্রশ্ন নং	প্রশ্ন	উত্তর
৩.১	বিএমআই	উচ্চতা……(ইঞ্চি) ওজন……(কেজি)
৩.২	আপনি কি অস্টিওআর্থারাইটিসের জন্য কোন ঔষধ গ্রহণ করছেন?	১।হ্যাঁ ২।না
৩.৩	আপনার কি কোনো আঘাতের ইতিহাস আছে?	১। হ্যাঁ ২।না।
৩.৪	আপনার কোন পাশ আক্রান্ত?	১। ডান ২। বাম

কো-মরবিডিটি ফ্যাক্টর

প্রশ্ন নং	প্রশ্ন	উত্তর
৩.৫	আপনার কি উচ্চ রক্তচাপ আছে?	১।হ্যাঁ ২।না
৩.৬	আপনার কি ডায়াবেটিস আছে?	১।হ্যাঁ ২।না
৩.৭	আপনার কি হৃদরোগ আছে?	১।হ্যাঁ ২।না

৩.৮ আপনার ব্যথা কতটা তীব্র?

ব্যথার স্কেলঃ



পর্ব:৪ স্কেল

শর্ট ফর্ম (এস এফ)৩৬ স্কেল

অনুগ্রহ করে স্বাস্থ্য সমীক্ষার **৩৬** টি প্রশ্নের উত্তর দিন সম্পূর্ণ সততার সাথে ,এবং কোনো বাধা ছাড়াই।

সাধারণ স্বাস্থ্য:

প্রশ্ন নং	প্রশ্ন	উত্তর
৪.১	সাধারণভাবে, এখন আপনার স্বাস্থ্য কেমন?	১।চমৎকার ২।খুব ভালো ৩।ভাল ৪। কিছুটা খারাপ ৫।খারাপ

৪.২	এক বছর আগের তুলনায়, আপনি এখন সাধারণভাবে আপনার স্বাস্থ্যকে কীভাবে মূল্যায়ন করবেন?	১।এক বছর আগের তুলনায় এখন অনেক ভালো ২।এক বছর আগের তুলনায় এখন কিছুটা ভালো ৩।একই রকম ৪।এক বছর আগের তুলনায় এখন কিছুটা খারাপ ৫।এক বছর আগের চেয়ে অনেক খারাপ

কার্যকলাপের সীমাবদ্ধতাঃ

নিম্নলিখিত আইটেমগুলি একটি সাধারণ দিনে আপনি করতে পারেন এমন কার্যকলাপ সম্পর্কে। আপনার স্বাস্থ্য কি এখন এই ক্রিয়াকলাপগুলিতে আপনাকে সীমাবদ্ধ করে? কিভাবে যদি তাই হয়?

প্রশ্ন নং	প্রশ্ন	উত্তর
৪.৩	জোরালো ক্রিয়াকলাপ, যেমন দৌড়ানো, ভারী জিনিস তোলা, কঠোর খেলাধুলায় অংশগ্রহণ করা।	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়
৪.৪	পরিমিত ক্রিয়াকলাপ, যেমন একটি টেবিল সরানো, ভ্যাকুয়াম ক্লিনার ঠেলে দেওয়া, বোলিং বা গলফ খেলা	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়
৪.৫	মুদীখানার পণ্যদ্রব্য তোলা বা বহন করা	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়
৪.৬	সিঁড়ি দিয়ে বেশ কয়েকটি ধাপ উপরে উঠা	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়
৪.৭	সিঁড়ি দিয়ে একটি ধাপ উপরে উঠা	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়
৪.৮	বাঁকানো, হাঁটু গেড়ে বসে থাকা বা নত হওয়া	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়

৪.৯	এক মাইলের বেশি হাঁটা	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়
৪.১০	বেশ কয়েকটি ধাপ হাঁটা	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়
৪.১১	একটি ধাপ হাঁটা	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়
৪.১২	গোসল করা বা নিজেকে সাজানো	১। হ্যাঁ, অনেকটাই সীমিত ২। হ্যাঁ, একটু সীমিত ৩। না, মোটেও সীমিত নয়

শারীরিক স্বাস্থ্য সমস্যাঃ

গত ৪ সপ্তাহে, আপনার শারীরিক স্বাস্থ্যের ফলে আপনার কাজ বা অন্যান্য নিয়মিত দৈনন্দিন ক্রিয়াকলাপে নিম্নলিখিতগুলির মধ্যে কোন সমস্যা হয়েছে?

প্রশ্ন নং	প্রশ্ন	উত্তর
৪.১৩	আপনি কাজ বা অন্যান্য কার্যক্রমে যে সময় ব্যয় করেছেন তা কমিয়ে দিন	১। হ্যাঁ ২।না
৪.১৪	আপনার দৈনন্দিন কাজগুলো করতে পারেন কিনা?	১। হ্যাঁ ২।না
৪.১৫	কাজের ধরণ বা অন্যান্য কার্যক্রমের মধ্যে সীমাবদ্ধতা ছিল	১। হ্যাঁ ২।না
৪.১৬	কাজ বা অন্যান্য ক্রিয়াকলাপ সম্পাদন করতে অসুবিধা হয়েছিল (উদাহরণস্বরূপ, এটি কি অতিরিক্ত প্রচেষ্টা নিয়েছিল)	১। হ্যাঁ ২।না

মানসিক স্বাস্থ্য সমস্যা:

গত ৪ সপ্তাহে, কোন মানসিক সমস্যা (যেমন হতাশা বা উদ্বিগ্ন বোধ) এর ফলে আপনার কাজ বা অন্যান্য নিয়মিত দৈনন্দিন কাজকর্মের সাথে নিম্নলিখিতগুলির মধ্যে কোন সমস্যা হয়েছে?

প্রশ্ন নং	প্রশ্ন	উত্তর
৪.১৭	আপনি কাজ বা অন্যান্য কাজকর্মে যে সময় ব্যয় করেছেন তা কমিয়ে দিন	১।হ্যাঁ। ২।না
৪.১৮	আপনি যা চান তার চেয়ে কম সম্পন্ন	১।হ্যাঁ। ২।না
৪.১৯	কাজ বা অন্যান্য কাজকর্ম যথারীতি সাবধানে করেননি	১।হ্যাঁ। ২।না

সামাজিক কর্মঃ

প্রশ্ন নং	প্রশ্ন	উত্তর
৪.২০	মানসিক সমস্যা আপনার পরিবার, বন্ধু, প্রতিবেশী বা অন্য গোষ্ঠীর সাথে আপনার সামাজিক কার্যকলাপের পরামর্শ করেছেন?	১। মোটেই না ২। সামান্য ৩।পরিমিতভাবে ৪। গুরুতর ৫।খুব গুরুতর
৪.২১	গত ৪ সপ্তাহে আপনি কতটা শারীরিক ব্যথা পেয়েছেন?	১। মোটেই না ২। সামান্য ৩।পরিমিতভাবে ৪। গুরুতর ৫।খুব গুরুতর
৪.২২	গত ৪ সপ্তাহে,আপনার স্বাভাবিক কাজের সাথে কতটা ব্যথা অনুভব করেছেন (বাড়ির বাইরের কাজ এবংঘরের কাজ সহ)	১। মোটেই না ২। সামান্য ৩।পরিমিতভাবে

		৪। গুরুতর ৫।খুব গুরুতর

শক্তি এবং আবেগ:

এই প্রশ্নগুলি হল গত ৪ সপ্তাহে আপনার অনুভুতি কেমন ছিল। এবং আপনি কেমন অনুভব করছেন।, অনুগ্রহ করে প্রতিটি প্রশ্নের জন্য এমন উত্তর দিন যা আপনার অনুভুতির সাথে মিলে যায় বা আপনি যেভাবে অনুভব করেছেন তার সবচেয়ে কাছাকাছি আসে।

প্রশ্ন নং	প্রশ্ন	উত্তর
৪.২৩	আপনি কি পরিপূর্ণ শান্তি অনুভব করেছেন?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময় ৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়
৪.২৪	আপনি কি খুব হতাশাগ্রস্থ ব্যক্তি ছিলেন?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময় ৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়
৪.২৫	আপনি কি হতাশ হয়ে আছেন যে কিছুই আপনাকে উত্সাহিত করতে পারে?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময় ৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়
৪.২৬	আপনি কি শান্ত এবং সস্তি অনুভব করেছেন?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময়

		৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়
৪.২৭	আপনার কি প্রচুর শক্তি ছিল?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময় ৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়
৪.২৮	আপনি কি উদাসীন ও হতাশ অনুভব করছেন?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময় ৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়
৪.২৯	আপনি কি ক্লান্ত অনুভব করছেন?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময় ৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়
৪.৩০	আপনি কি সুখী ব্যক্তি ছিলেন?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময় ৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়
৪.৩১	আপনি কি ক্লান্তি অনুভব করছেন?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময়

		৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়

সামাজিক কর্মঃ

প্রশ্ন নং	প্রশ্ন	উত্তর
৪.৩২	গত ৪ সপ্তাহে, কতটা সময় আপনার শারীরিক স্বাস্থ্য বা মানসিক সমস্যাগুলি আপনার সামাজিক (যেমন বন্ধুবান্ধব, আত্মীয়দের সাথে দেখা ইত্যাদি) পরামর্শ করেছেন?	১।সব সময় ২।অধিকাংশ সময় ৩। অল্প সময় ৪।কিছু সময় ৫।একটু সময় ৬।সময়ের কোনটিই নয়

সাধারণ স্বাস্থ্য:

আপনার জন্য নিম্নলিখিত বিবৃতিগুলির প্রতিটি কতটা সত্য বা মিথ্যা?

প্রশ্ন নং	প্রশ্ন	উত্তর
৪.৩৩	আমি অন্য লোকেদের তুলনায় একটু সহজে অসুস্থ হয়ে পড়ি।	১।অবশ্যই সত্য ২। বেশিরভাগই সত্য ৩। জানি না ৪। বেশিরভাগই মিথ্যা ৫।অবশ্যই মিথ্যা
৪.৩৪	যতটা জানি আমি অন্য মানুষের তুলনায় অনেকটা সুস্থ আছি	১।অবশ্যই সত্য ২। বেশিরভাগই সত্য ৩। জানি না ৪। বেশিরভাগই মিথ্যা ৫।অবশ্যই মিথ্যা

৪.৩৫	আমি অনুমান করছি আমার স্বাস্থ্য আরও খারাপ হচ্ছে।	১।অবশ্যই সত্য ২। বেশিরভাগই সত্য ৩। জানি না ৪। বেশিরভাগই মিথ্যা ৫।অবশ্যই মিথ্যা
৪.৩৬	আমার স্বাস্থ্য চমৎকার।	১।অবশ্যই সত্য ২। বেশিরভাগই সত্য ৩। জানি না ৪। বেশিরভাগই মিথ্যা ৫।অবশ্যই মিথ্যা

Gant chart

Activities/ months	Sep 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24	Mar 24	Apr 24	May 24	June 24	July 24	Aug 24
Proposal presentation												
Introduction												
Literature review												
Methodology												
Data collection												
Data Analysis												
Result												
1st progress presentation												
Discussion												
Conclusion And Recommendation												
2nd progress presentation												
Communicationwith supervisor												
Final submission												