WORK-RELATED MUSCULOSKELETAL DISORDERS AMONG PHYSIOTHERAPISTS: A CROSS-SECTIONL STUDY

Faculty of Medicine

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Submitted by-

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DECLARATION

This work has not previously been accepted in substance for any degree and isn't concurrently submitted in candidature for any degree. This dissertation is being submitted in partial fulfillment of the requirements for the degree of B.Sc. in Physiotherapy.

I confirm that if anything identified in my work that I have done plagiarism or any form of cheating that will directly awarded me fail and I am subject to disciplinary actions of authority. I confirm that the electronic copy is identical to the bound copy of the Thesis.

In case of dissemination the finding of this project for future publication, research supervisor was highly concern, it was duly acknowledged as graduate thesis and consent was taken from the physiotherapy department of Saic College of Medical Science and Technology (SCMST).

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Acronyms

MSD:	Musculoskeletal disorder
WRMD:	Work related musculoskeletal disorder
PT:	Physiotherapist
BMI:	Body mass index
WRMDs:	Work-related musculoskeletal disorders
SCMST:	Saic College of Medical Science and Technology
WHO:	World Health Organization

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Abstract

Purpose: Musculoskeletal conditions are thought to affect a lot of health care professionals, according to mounting research. A greater risk of work-related musculoskeletal disorders is suggested by some academic studies for physiotherapists. Objectives: So, the objective this research was carried out To Identify the worked-related musculoskeletal disorders among the physiotherapists in Dhaka city and Savar upazila. ***Methodology:*** The prospective quantitative research was carried out to accomplish the objective of the study. 129 participants among physiotherapists were selected as simple random sampling technique. The investigator used a mix of both structured and semi-structured questionnaire and participants were requested to give opinion based on the structure of the question. Data were numerically coded and put in both Excel and SPSS 25 version software program. Descriptive statistics was performed to obtain the result of the study. with work-related discomfort or pain detected in nine locations of the body: (1) neck, (2) shoulder, (3) elbow, (4) wrists, (5) upper back, (6) lumbar, (7) thighs, (8) knee, and (9) ankle. ***Results:*** 69% of physical therapists suffer musculoskeletal disorder, according to the results of this research. In this study 43.4% were neck, 9.3% were right shoulder, 3.9% were Left shoulder, 4.7% were both shoulders, 5.4% were Right wrist, 1.6% were left wrist 0.8% were both wrist, 26.40% were upper back, 52.7% were lower back, 4.7% were right hip, 1.6% were left hip, 5.4 were both hips, 8.5% were right knee, 2.3% were right knee, 2.3% were both knees, 3.1% were right ankle, 2.3% were left ankle and 3.1% were both ankles. ***Conclusion:*** Work-related musculoskeletal disorder were common among physical therapists, especially in their neck, lower back, elbow, and ankle regions.

Key words: Musculoskeletal disorder, Physiotherapists, Work related musculoskeletal disorder.

CHAPTER-I INTRODUCTION

1.1 Background

The researcher said that since the middle of the 1980s, physical therapists' occupational complaints and disorders have been the subject of ongoing study. International studies of physical therapists found that mental illnesses, skin conditions, and infections, as well as musculoskeletal disorders, were relevant. The majority of these studies noted elevated risks of musculoskeletal disorders and complaints, particularly those affecting the upper back, lumbar spine, neck, shoulders, wrists, hands, knees, and thumbs (Girbig et al.,2017).

Researcher told that physical therapists (PTs) frequently experience work-related musculoskeletal disorders (WRMDs), which one researcher estimated to impact approximately 91% of PTs at some time in their employment. According to some studies, these accidents happen often in the first 4-5 years of practice, with a 1-year incidence of 20.7%, while other researchers claim physical therapists who are older suffer more work-related accidents. These injuries, which are thought to be directly connected to physical therapy practice, have an impact on PTs in numerous ways, including their practice techniques, clinical judgment, and personal life. In reaction to WRMDs, PTs could seek medical attention, alter their own daily routines, and, if the condition is severe, might not be able to work. PTs can use a range of techniques to assist stop subsequent injuries (Cornwell., 2021).

Millions of employees in Europe suffer from musculoskeletal disorders (MSDs), which are the most prevalent work-related health issue, according to a 2010 research by the European Agency for Safety and Health at Work (OSHA). They said that as the exposure to these illnesses' risk factors at work increases across the European Union, the extent of the problem is anticipated to grow (Collins & Sullivan., 2015).

It is defined by the presence of pain, stiffness, or impairment in the joints, muscles, tendons, and other soft tissues that is brought on or made worse by repetitive motions and protracted uncomfortable or forced body postures. Due to the strong visual demands of dentistry, which force employees to adopt fixed postures, it is particularly at risk for MSD development (Gopinadh et al.,2013).

The musculoskeletal systems is a compound thing, composed of bones, joints muscles, tendons, ligaments, bursa, nerve and blood vessels and commonly affect them (Samat et al., 2011). The presence of discomfort, disability or fixed pain in the joints, muscles, tendons and other soft parts are the characteristics of musculoskeletal disorder. Repeated movements and sustained awkward or involuntary body postures are responsible for musculoskeletal disorder (Hayes et al., 2009).

All activities that perform using musculoskeletal system are walking, sitting, running, playing, dancing, and working. Postures and movements are dependent on the working of the musculoskeletal system but burden of physically determined tasks may pose a threat to it. Uncomfortable posture, monotonous work or managing heavy materials may damage the system and leading to musculoskeletal fatigue, pain or complaints (Rahman & Atiya, 2009).

Author said that according to research conducted across the world, physical therapists should be aware of conditions affecting the musculoskeletal system, the skin, infections, and the mind. Given the current level of study, the following truths are illustrated by worldwide literature: Workload on the musculoskeletal system and illnesses The importance of musculoskeletal workload among physical therapists is shown by a number of worldwide cross-sectional studies. It was noted that the primary localizations of these symptoms were the lumbar spine, upper back, neck, shoulders, wrists/hands, and knees. Physical therapists in Germany may be concerned about the following occupational disorders as they pertain to studies conducted abroad: tendon sheath diseases, disc-related diseases of the lumbar spine, osteoarthritis of the knee, and meniscus lesions (Girbig et al.,2013).

It was suggest that physical therapists' cultural beliefs may make it challenging for professionals to minimize the dangers of WRMDS while at work. Nigerian physiotherapists was expected to be a part of this image despite the differences in contextual practice settings since these cultural values are universal and specific to physiotherapy. Despite the abundance of knowledge about WRMDs among physiotherapists worldwide, nothing appears to be known about the occupational risks of practicing physiotherapy in Nigeria (Adegoke et al.,2018).

According to researcher physiotherapists are trained to treat musculoskeletal illnesses and discomfort, yet they are particularly vulnerable to work-related injuries of this nature. The nature of physical therapy might generate musculoskeletal diseases in physiotherapists that are connected to their jobs. A physiotherapist can find

employment in a variety of places, such as teaching, university hospitals, public hospitals, pediatric rehabilitation facilities, home health care, private physical therapy clinics, etc. Repetitive jobs, unpleasant postures, and excessive force levels are the three main risk factors that have been linked to work-related musculoskeletal illnesses. Physiotherapists also frequently aid with mat activities, move heavy objects in the OPD, and transport dependent patients who have been transferred to the ICU and wards. These professional responsibilities put therapists at risk for both acute and long-term musculoskeletal conditions (Malarvizhi et al.,2017).

The researcher said that physical activity (PA) is defined as any physiological movement performed by skeletal muscles that results in energy expenditure. Physical fitness (PF) is the ability for such activity. Body composition, cardiorespiratory and muscular endurance, muscle strength, and flexibility are its five constituent parts. The degree of PF is regulated by environmental variables like exercise but is also largely genetically fixed. Although research to yet has not been able to quantitatively demonstrate this, excellent PF is thought to be a protective factor for the incidence of MSDs (Tislar et al.,2022).

Account to author specific MSDs, such as osteoarthritis of the hips in some groups of farmers, may be caused by physical variables at work, such as frequent or extended employment in uncomfortable postures or exposure to vibration. Physical issues at work are far less likely to be the cause of non-specific diseases like widespread arm discomfort. Before blaming employment for an MSD, caution must be used because the etiology is typically complex and work may not be the sole or even the primary contributor. Additionally, employment is a complicated causal element in the onset, progression, and impairment associated with MSDs. There are other variables at play, including as the physical and psychological demands of the job, interactions with peers and superiors, and the employee's sense of organizational fairness. In-depth examination of specific relationships between occupational exposures and the emergence of MSDs will take place in later chapters (Madan & Grime 2015).

The researcher said that a complicated issue that goes beyond the traditional scientific perspective and therapy for pain episodes is the prevention of occupational impairment in people with MSD. Evidence indicates that we need to adopt a more comprehensive disability paradigm that considers the intricate interactions among biological, psychological, and social factors as well as interactions among various stakeholders (employer, insurer, and healthcare providers) who work with the patient

during the disability process. While secondary work disability prevention focuses on assisting patients in returning to work, primary work disability prevention focuses on assisting patients in continuing to work while having an MSD. There is evidence that treatments and solutions engaging all parties, including the employer, may be economical. The fact that there is no one-size-fits-all approach to MSD treatment and disability prevention has now come to light. Recent developments include stratifying patients for therapy by screening for known biopsychosocial risk factors using accurate and effective instruments, and then implementing therapies intended to address their particular issues and risk profile. The difficulty is in creating instruments that are sufficiently validated and stratify patients into treatment streams that match their risk profiles in order to maximize the likelihood that they will have a positive result. Additionally, if mass media campaigns are well implemented, they may have an impact on the views and actions of the general public (pain, 2013).

1.2 Justification of the study

Now a day's musculoskeletal disorders among physiotherapist are becoming epidemic in situation. Many people we see are related to physiotherapy profession and suffering from musculoskeletal disorder. They spend huge amount of currency each year for the treatment of working related disorders as well as for musculoskeletal disorder. Physiotherapist may be one of the leading cause of musculoskeletal disorder. Musculoskeletal disorders involves illness and injury. Not only currency spend the physiotherapist also suffer much from musculoskeletal disorder. These disorders lead lite threatening complication. From this study physiotherapist's will able to identify the risks that can influence their activities. Physiotherapists may provide proper recommendation for every single risk which will be helpful for better service. Beside this it will be help to established guidelines in line with ergonomics for space, equipment, furniture and environmental conditions of their workplace. This study will also help to improve their awareness, especially about their posture when treating patients. Besides this it will be helpful for professional development which is crucial for current situation of the profession. From this study researcher can identify the risk factors of the workplace and adjustment of equipment's and posture which are harmful for the physiotherapist because physiotherapist have to treat a patient in various aspect work condition with frequent change of the posture. So the study may help to their awareness about their posture. And finally will help to discover the role and importance of physiotherapy in every sector of Bangladesh. A lot of study were done world- wide regarding this topic to determine the work-related musculoskeletal disorder. But very few study were conducted on this regard in our country. Among the few studies that were found locally not sufficient to present the real picture of the situation due to shortage of information and study were conducted couple of year back which does not represent the present situation on this regard. So it is very urgent to know the situation. For this reasons, one study is necessary to conduct on this topic to take the preventive measures and minimized the gap of the knowledge on this regard. For further research it will also open large avenue and the result of the study may help health care provider as well as physiotherapist to take preventive measures. That is why conducting this study is the necessity of the time for the physiotherapist.

1.3 Research Question

What are the work related musculoskeletal disorders among physiotherapists in Dhaka city and Savar upazila?

1.4 Aims of the study

Identify the worked-related musculoskeletal disorders among the physiotherapists in Dhaka city and Savar upazila.

1.5 Objectives of the study

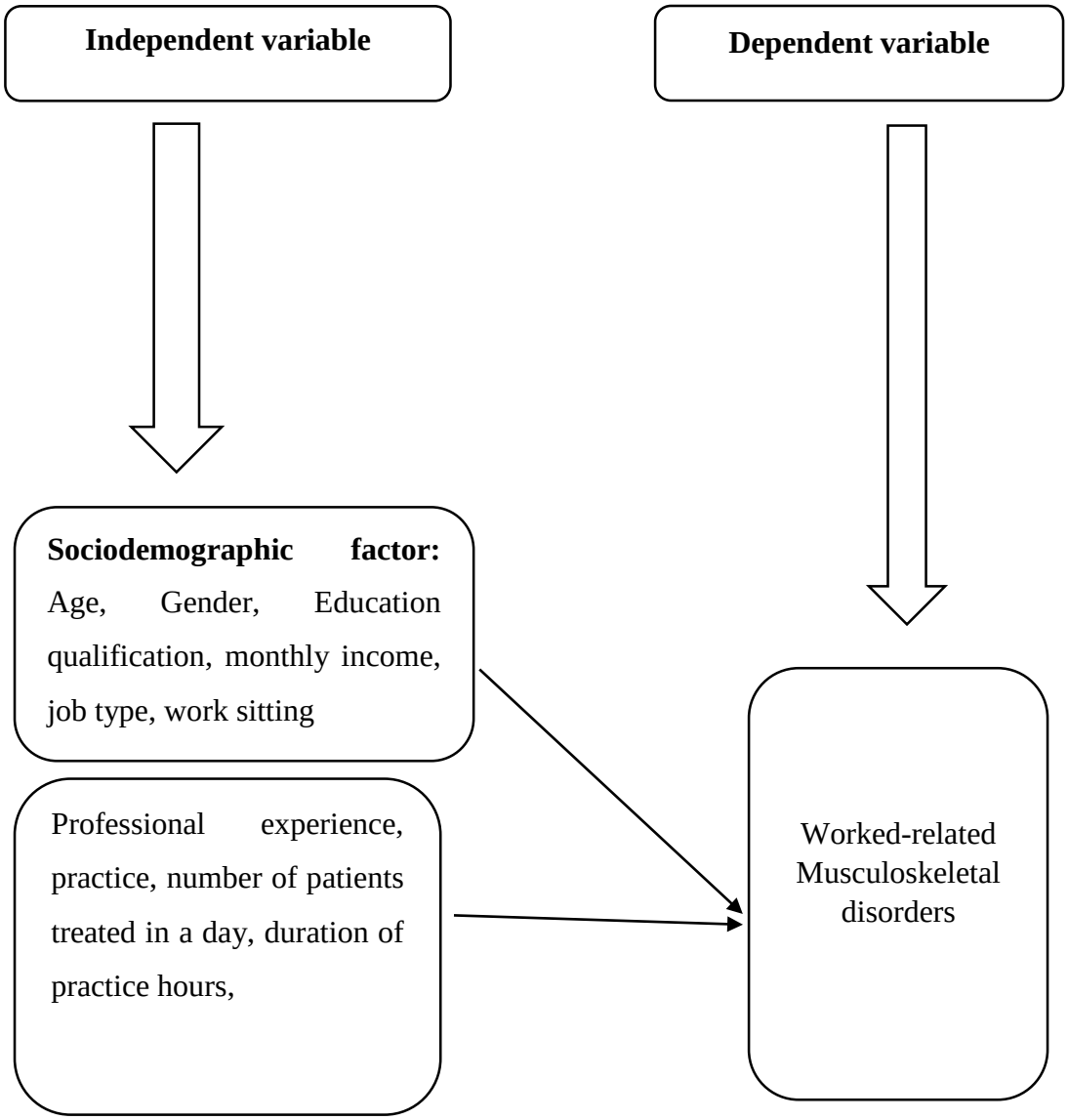
1.5.1 General objective:

- ✓ To Identify the worked-related musculoskeletal disorders among the physiotherapists in Dhaka city and Savar upazila.

1.5.2 Specific objectives:

i. To determine the prevalence of musculoskeletal disorders among the physiotherapists in Dhaka city and Savar upazila:
ii. To find out Socio demographic characteristics of study population;
iii. To determine the most affected body parts of the physiotherapist in Dhaka city and Savar upazila by using NMSQ;
iv. To determine the socio demographic factors associated with musculoskeletal disorders among the physiotherapist.

1.6 Conceptual frame work:



1.7 Operational definition

Work related musculoskeletal disorder

Work-related musculoskeletal disorders (WRMD) are the disorders of muscles, tendons, ligaments and nerves that develops due to work related factors such as repetitive work or activities with awkward postures with symptoms of pain, aches, parathesis, tingling, numbness and stiffness etc. Some examples of musculoskeletal disorders include back pain, neck pain, carpal tunnel syndrome, tendonitis and tenosynovitis etc.

Musculoskeletal System:

The musculoskeletal system gives the body its shape, support, stability, and mobility. It consists of the skeleton's bones, muscles, cartilage, tendons, ligaments, joints, and other connective tissue that holds tissues and organs together and supports them.

Musculoskeletal Disorders:

Musculoskeletal problems are a wide range of inflammatory and degenerative conditions affecting the muscles, tendons, ligaments, joints, peripheral nerves, and supporting blood vessels.

Pain:

Pain is a distressing sensory or emotional sensation that is connected to actual or potential tissue damage and is defined in terms of such damage.

Numbness:

A partial or complete loss of sensation in a physical component

Paresthesia: It is an unusual sensation of the skin (such as tingling, pricking, chilling, scorching, or numbness) that has no discernible physical origin.

Numeric Pain Rating scale (NPRS):

The NPRS is a segmental numerical version of the VAS in which the respondent chooses an integer value between 0 and 10 that best describes the degree of their pain. The NPRS is supported with phrases that describe the extremes of pain severity, much like the VAS

Physiotherapist

Physiotherapists assess, plan and implement rehabilitative programs that improve or restore human motor functions, maximize movement ability, relieve pain syndromes, and treat or prevent physical challenges associated with injuries, diseases and other impairments.

Body Mass Index (BMI)

Body Mass Index (BMI) is a person's weight in kilograms (or pounds) divided by the square of height in meters (or feet). A high BMI can indicate high body fatness. BMI screens for weight categories that may lead to health problems, but it does not diagnose the body fatness or health of an individual.

CHAPTER – II LITERATURE REVIEW

Musculoskeletal disorders are sometimes called ergonomic injuries and illnesses. Ergonomics is the study of the worker's interaction with tools, equipment, environment, jobs, tasks, work methods, work rates, and other systems. The federal Bureau of Labor Statistics (BLS) (2011) has defined musculoskeletal disorders (MSDs) as injuries and disorders to muscles, nerves, tendons, ligaments, joints, cartilage, and spinal discs. Musculoskeletal disorders do not include injuries causing from slips, trips, falls, or similar accidents. Musculoskeletal disorders include many kinds of sprain and strain, carpal tunnel syndrome, tendinitis, sciatica, and low back pain. Musculoskeletal disorders result from bodily reactions due to bending, climbing, crawling, reaching, or twisting, and from overexertion and repetitive motion (Maier & Ross-Mota, 2009). Medical terms used to describe musculoskeletal disorders to various parts of the body include low back pain, tendinitis, bursitis, carpal tunnel syndrome, epicondylitis, trigger finger, thoracic outlet syndrome, carpet layers knee and degenerative disc disease (Peter, 2006).

Work Related Musculoskeletal Disorders (WRMDs) are common in other anatomical areas like neck, elbow, wrist and hand, but studies reported a high prevalence of lumber (Al Eisa et al., 2012).

Health care professionals regularly rank among the most commonly injured occupational groups by musculoskeletal disorders. The U.S. Department of Labor Bureau of Labor Statistics (BLS) indicates that, healthcare support occupations rank first among all professions in terms of sustaining on the job musculoskeletal injuries involving days away from work. The occupational groups (rehabilitation, nurses and other professional healthcare occupations) with musculoskeletal injuries shows absenteeism during working days and are ranked seventh in musculoskeletal injuries. A growing body of evidence demonstrates significant injury rates among rehabilitation professionals (Arnold et al., 2011).

Physiotherapy is a health care profession concerned with human function and movement and maximizing potential. Physiotherapists who treats injury or dysfunction with exercises and other physical treatments of the disorder. Chartered physiotherapists work with a broad variety of physical problems, especially those associated with the neuromuscular, musculoskeletal, cardiovascular and respiratory systems. They may work alone, with physiotherapy colleagues or teams and with other healthcare

professionals in multi-professional teams (Sommerich et al., 2006).

Physiotherapists (graduate) are now working independently in outpatient's clinic, assessing and diagnosing and complete management responsibility for patient. Prescribing drugs would entail the range of medication as their condition related for both oral use and for injection. With responsibilities physical therapist works in Hospitals, Private clinics, Rehabilitation centers, and long term care, Home care programs, including schools for children with special needs, Child development centers, Public health units or health planning agencies, Industry and commercial places ,Recreation centers (Ritchie, 2007).

In order to be eligible to register with the Health Professions Council and practice as a physiotherapist, one will have to graduate from an approved course. Physiotherapists have a duty to keep up to date with new knowledge generated by research with what their peers thinking and by formally evaluating outcome their practice. Physiotherapists have responsibilities to patient with safe and effective interventions, to treat patient with respect and dignity, to involve patients in decision making about their treatment. Physiotherapists have ethical responsibilities to payers for the services. Programed for 12 the professional development should be put on the place to facilitate full compliances as a part of the individual's professional responsibility (Mead, 2003).

Low back pain (LBP) is one of the most dominant and one of the most commonly treated musculoskeletal disorder (Rundell et al., 2009). Eighty percent of the adult population experience LBP in their lifetime (Ekstrom et al., 2008). This means that most individuals will experience LBP regardless of their age, gender or career. Most of the physiotherapists experience work-related musculoskeletal disorders (WMSD's), especially LBP during their career. It follows that physiotherapists are at risk of experiencing back pain in the process of helping and treating patients (Rozenfeld et al., 2010; Campo et al., 2008; West and Gardner, 2005).

The onset of LBP amongst younger physiotherapists occurs between the ages of 21 and 30 years and within the first four years of qualification and starting to practice physiotherapy. Other authors report a prevalence of 30-40% with up to 60% LBP in the first five years of employment. To prevent recurrence of LBP preventative measures must be taken. For standardization, a clear definition is needed for recurrent LBP as demonstrated in a systematic review done by Stanton et al., (2010) to minimize different findings for prevalence and treatment outcomes for recurrent LBP. Several studies have

documented that, physical therapists are frequently experienced work related Low back pain and they highlighted the prevalence and risk factors of LBP among physical therapist (Shah & Dave et al.,2012); (Buddhadev & Kotecha,2012); (Al Eisa et al.,2012); (Falavigna et al.,2011).

Worldwide, 37% of low back pain is related to occupational risk factors (Falavigna et al., 2011) and in physical therapist, there has been 29% prevalence of work related LBP (Cromie et al., 2004). Cormie et al define work related LBP as, job related ache, pain in low back, and they reported its prevalence as 62.5%. Studies also reported the highest prevalence in younger therapist and the prevalence of initial onset most commonly within first 4 years was reported (Cromie et al., 2002). Work related LBP cases associated with an initial episode could be resolved within 24 weeks. It had been observed that, individuals who suffered from WRLBP problems might develop multidimensional disruptions, which could affect their occupations. Physical impact includes the loss of physical function and deteriorated general health. Social impact included decreased participation in social 13 activities. Psychosocial impacts are displayed through insomnia, irritability, anxiety and depression (Shah & Dave, 2012).

Physical therapists routinely perform manual therapy, such as soft-tissue mobilization, which means that the upper limb is also uncovered to risk factors associated with musculoskeletal and neurovascular disorders. These professionals routinely perform activities that involve transferring a patient, assisting with activities on the exercise mat, and lifting and using cumbersome equipment (Cromie et al., 2007). These work tasks put therapists at risk for both acute and increasing musculoskeletal pain.

Although physical therapists have expert knowledge about prevention and treatment of musculoskeletal disorder but still they have higher frequency of low back pain and related conditions (Nourdin & Leonard, 2011). The major cause of LBP in physical therapy profession is the nature of job. The physical therapy practice involves repetitive tasks, high force manual techniques bending/twisting postures, patient transfer assisting with mat activities, lifting heavy equipment. Among them, three most common factors have been documented in previous studies: uncomfortable postures, repetitive task and high force level (Buddhadev & Kotecha, 2012) ; (Al Eisa et al., 2012) ; (Falavigna et al., 2011). Apart from nature of job, WRLBP also relates with specific sub-specialties, gender of physical therapist, body mass index, work experience and working cultures (Nourdin & Leonard, 2011).

The area of practice for the physical therapist is an important factor for understanding the occurrence of back pain in work related musculoskeletal disorders. Certain subspecialties contribute LBP more than others and it includes musculoskeletal out patient, neurological rehabilitation, geriatric rehabilitation. Molumphy et al.,(2006) reported that, 18% of physical therapist with work related low back pain changed their work setting and that 12% of the physical therapist reduces their patient care hours(Cormie et al., 2007).

There is scanty information about the association of work related low back pain, body mass index and physical activity level of physical therapist. Very few researches are available which provide data on body mass index association but the results are in contrast with one another (Nourdin & Leonard, 2011). No previous researches are available about the association of physical activity level and work related low back pain in physical therapist. Previous researches identify self-protective behavior which include outsourcing, preventive and reactive strategies used by physical therapist to minimize effects and risk of developing Work related Musculoskeletal Disorder like change in posture, adjust bed height, use of aids and equipment, using a different body part and substituting electro therapy etc.(Cromie et al.,2000). There have been many studies conducted worldwide on prevalence of work related low back pain in physiotherapist. While gathering literature research it was found that, there is no such study conducted in past focusing particularly on this issue in Pakistan. So the aim for this study is to find out the prevalence of work related low back pain among physiotherapist in Karachi, to explores how physical therapist see themselves when they experience work related low back pain and to establish information on influencing factors specifically body mass index, subspecialty areas and physical activity level of physical therapist on the occurrence of work related low back pain.

Exposure to risk factors for work related musculoskeletal disorders is likely to result from patient care activities that include lifting patients, transferring patients, and the performance of manual therapy. Each activity involves the application of relatively high levels of force, and each activity may have to be performed in hazardous postures. Patient handling has been consistently associated with work related musculoskeletal disorders in physiotherapists, (Smith & leggat, 2007) and biomechanical studies (Skotte et al., 2009) have demonstrated very high associated loads.

The researcher said that, Injury or dysfunction of the muscles, bones, nerves, tendons, ligaments, joints, cartilages, or spinal discs are referred to as musculoskeletal disorders. Sprains, strains, rips, stiffness, pain, carpal tunnel syndrome, hernias, and connective tissue injuries to the aforementioned structures are all examples of musculoskeletal illnesses. Several epidemiological studies have shown evidence of a causal association between physical exertion at work and job-related musculoskeletal illnesses, according to the National Institute for Occupational Safety and Health (NIOSH) (WMSD) (Costa &Vieira, 2010).

According to researcher, The Global Burden of Disease (GBD) 2010 study identified five musculoskeletal (MSK) diseases: rheumatoid arthritis (RA), osteoarthritis (OA), gout, low back pain (LBP), and neck pain (NP). A wide range of abnormalities of the muscles, bones, and ligaments exist in addition to these five MSK diseases, but they are not precisely described and are not included as long-term consequences of accidents. Other musculoskeletal illnesses have been used to classify this diverse remainder (rest) of MSK diseases (other MSK). The term "other MSK" refers to a wide range of specific conditions, including autoimmune and other inflammatory diseases like systemic lupus erythematosus, ankylosing spondylitis, and psoriatic arthritis, as well as a variety of joint, ligament, tendon, or muscle issues that result in localized or widespread pain, including shoulder issues and fibromyalgia. From survey to survey, the varying proportions of each disease could change (Smith et al., 2014).

The researcher said that, the muscles, joints, tendons, ligaments, and nerves of the body are all impacted by musculoskeletal disorders (MSDs), according to the World Health Organization (WHO). The phrase "musculoskeletal dysfunction" refers to a broad range of illnesses that develop as a result of repeatedly subjecting the body to minor or severe stress. The majority of WMSDs emerge gradually and are either brought on by the work itself or by the environment in which employees operate. Physical therapists frequently have a greater risk of getting WMSDs since they spend most of their workdays performing physically taxing, stressful, repetitive duties (Desai & Shah, 2021).

The low back is the largest body part affected in physiotherapists, followed by the neck and upper back region, the shoulder, wrist, knee, thumb, and fingers, the hip, the elbow, and the legs and toes. Poor alignment, repetitive neck and shoulder movements, lengthy manual therapy applications, managing patient anxiety and mental

stress, genetic predisposition, physical conditioning, age, gender, time constraints, excessive demand, and inadequate social support, among other factors (Desai & Shah, 2021).

WMSDs are caused by factors related to the workplace environment, noise, mental health, work type (repeated tasks), incorrect body posture, and position. The frequency and duration of biomechanical load might influence MSDs or musculoskeletal pain (MSP), which can worsen when people do jobs. The importance of gender and obesity is also mentioned in this passage. Women are more susceptible to low back pain than men are, and obesity increases the risk of low back discomfort (Hossain et al.,2022).

The researcher observed, 300 licensed physical therapists working in Bangladesh have various stages of musculoskeletal diseases. Physical interviews were conducted with all of the participants, and the data were saved for later statistical and non-clinical analysis. (Hossain et al., 2022).

According to author, Physical therapists who met the following requirements for enrollment were eligible: they had to spend at least one hour per day in therapy, be between the ages of 25 and 60, be willing to share information about pain, sign an informed consent form, and be members of our university's alumni association. The questionnaire for the participants must be filled out. The following were listed as exclusion criteria: a, history of trauma, b. history of MSDs prior to entering the physiotherapy profession, c history of rheumatologic disorders, d history of congenital disorders, e. history of psychological illnesses, e. history of long-term systemic corticosteroid administration, f history of any type of systemic disorder, and/or g history of drug addiction. Unanswered portions of the interview questions were deleted (Hossain et al., 2022).

The researcher said that using a questionnaire, a thorough cross-sectional case study was conducted to collect information from numerous comparable research that had been published globally in respected publications (Elsevier, Scopus, Springer Nature, Willey, and PubMed). The physical therapists in Bangladesh have approved the use of this questionnaire, which was first given to a limited number of qualified local physical therapists as part of a pilot project. To get results, a few minor changes were made to the questionnaire (Hossain et al., 2022).

According to researcher to get precise data and overcome challenges, a self-administered questionnaire was created. The questionnaire was primarily broken down

into three areas, comprising issues like (1) Age, Gender, BMI, Designation; (2) Anatomical location foundation MSD ratio; and (3) Correlation between MSD and BMI/Treatment seeking behavior/Gender. This questionnaire, which was developed using a modified version of the Nordic Questionnaire, was used to find discomfort or unsettling sensations in nine different areas of the body: the neck, the shoulder, the elbow, the wrists, the upper back, the lumbar region, the thighs, the knee, and the ankle. The validity of the questionnaire was examined in Bangla. The items were all determined to be genuine. Prior to starting a career in physical therapy, to have general health records and familiarity with work-related musculoskeletal disorders. WRMDs' impact on physical therapists and the characteristics of a physical therapy center or department. Musculoskeletal discomfort in the therapist's body was referred to as WRMSDs after entering the field of physical therapy. This unpleasant situation might or might not make it difficult to carry out routine work tasks and non-work-related activities. On the basis of a previously defined scoring matrix, pain perception was evaluated using a 4-point pain index (0 = No pain, 1 = Mild pain, 2 = Moderate pain, and 3 = Severe pain) (Hossain et al., 2022).

According to researcher to the findings of this study, musculoskeletal issues affect 85.5% of physical therapists in Bangladesh. The most often affected areas (7.1%) were the neck (25.7%), lower back (15.2%), elbow (12.3%), ankle (8.6%), and shoulder (8.6%). Ailments of the hips (2.2%) and upper back (3.1%) had the lowest prevalence rates. 269 people participated in this study, of whom 230 (85.5%) were positive cases and 39 (14.5%) were negative. Regarding age, it was discovered that 3.7% of therapists did not have work-related musculoskeletal condition (WMSD), whereas 96.3% of those who were 30 years of age or younger did. Sixty-six (80.3%) therapists between the ages of 31 and 40 had WMSD, compared to 19.7% without it. Among therapists between the ages of 41 and 50, 12.2% did not have WMSD, but 87.8% of individuals with WMSD did. Among therapists who were 51 years of age or older, 77.8% suffered from depression, whereas 22.2% did not. This study found that 15.3% (or 21.7%) of the 230 people who had WMSD sought medical attention. Other affected anatomical regions include the shoulders (7.1%, N=19), elbows (12.3%, N=33), wrists/hands (5.2%, N=14), upper back (3.0%, N=8), lower back (15.2%, N=41), hips/thighs (2.2%, N=2.2%), knees (6.3%, N=17), and ankles/feet (8.6%, N=23), where visits to a physiotherapist and a doctor were respectively, Last but not least, among overweight individuals, the lower back (N=13) had the largest prevalence of anatomical areas,

along with the neck (N=6), knees (N=4), ankles/feet (N=4), wrists/hands (N=3), elbows (N=2), and hips/thighs (N=1), respectively (Hossain et al., 2022).

Alnaser et al., (2019) observed 149 (48%) of the PT responders reported having been injured within the previous 12 months. Additionally, 53% had 10 years or less of experience, 53% were between the ages of 22 and 32, and roughly 65% had 20 to 40 hours per week of direct patient interaction. In addition, 109 (73%) of the 109 (73%) female and 40 (27%) male PT responders reported having injuries. The lower back had the highest degree of WMSD among PT respondents who had sustained injuries (55%), and muscular spasms were the most frequent form of injury (51%). Furthermore, general hospitals (32%), rehabilitation hospitals (30%), and schools (16%) were the places where WMSDs happened most frequently. Additionally, the most typical settings for WMSDs were inpatient (43%) and outpatient (40%) settings. When the years of experience of PT respondents with and without injuries were compared using an independent sample t-test, there was a significant difference (= 11.27 (7.04)), t(309) = -2.16, p = 0.03. PT respondents with and without injuries were compared using a separate sample t-test, and the results revealed a significant difference (= 29.43 (12.17), t (310) = -3.28, p = 0.001).

The researcher said male employees in the housekeeping department had a 1.61 times higher risk of developing musculoskeletal disorders at work compared to male employees in the administration department (OR = 1.58, 95% CI = 0.57-3.89), and male employees who had worked for more than five years had a 1.58 times higher risk. All of the aforementioned cases show a statistically significant link to musculoskeletal conditions related to the workplace. Additionally, the risk of developing work-related musculoskeletal disorders was 2.1 times higher in female workers over 30 than in those under 30 (OR = 2.1, 95% CI = 0.92-5.12); 3.43 times higher in female nurses than in administrative staff (OR = 3.43, 95% CI = 0.37-4.42); 2.08 times higher in females who performed manual lifting of more than 10 kg than in those who did not (OR = 2.08, 95% CI = 0.82-3.87); They were all statistically significantly associated with musculoskeletal problems linked to employment (M., et al 2018).

According to the researcher the results showed that during the preceding 12 months, lower back (58%), neck (28%), and shoulder (15%) had the highest prevalence of MSD, followed by lower back (31%), elbow (2%), and wrist (5%) for the prior week. In comparison to male participants, female participants had chances of 1.31 in the neck, 1.42 in the shoulder, 1.23 in the elbow, 1.2 in the wrist/finger, and 2.65 in the back pain.

Strong associations were reported between low back pain and education level (OR = 4.70), number of hours slept per day (OR = 3.02), number of years worked (OR = 3.05), wrist/finger discomfort (OR = 3.05), and physical activity (OR = 3.22) (M., et al 2018).

According to the author Although physiotherapists are well knowledgeable about musculoskeletal injuries and preventative techniques, research shows that this group of employees has a significant prevalence of WMSD. Physiotherapists' jobs are physically taxing since they frequently do the same duties, use a variety of manual methods, and place their joints awkwardly while holding fixed positions for extended periods of time. Higher physical workloads, as well as psychosocial risks like time constraints or poor job management, are linked to higher exposure of physiotherapists to WMSD. WMSD was 92.2% prevalent after one year. The neck (64%) and lower back (63) had the highest WMSD prevalence across a 12-month period. For the shoulders and ankles/feet regions, WMSD was linked with older age and more years of practice. There were some physiotherapy patients who were at risk for neck and other body region problems. Different bodily parts' levels of physical activity were not associated with WMSD. In this sample, the 1-year prevalence of pain in any body part was 92.2%, which indicates that 94 participants had pain or discomfort in at least one body part in the previous 12 months. The neck (64%) and lower back (63%), among other body areas, had the greatest one-year prevalence of pain in this population. Elbows (8%) and ankles/feet (15%) were the body areas with the fewest symptoms. Only one responder had never before experienced pain or discomfort in any region during the course of their lives, according to the 99% prevalence rate (Meh et al., 2020).

The researcher said that, frequency of WMSDS was noticeably greater among female physiotherapists, according to Nordin NAM et al. The higher prevalence of WMSDs among female physiotherapists has been reported in numerous other studies, and this finding has been linked to the fact that women are typically shorter and physically weaker than men, which may put them at a disadvantage when performing care tasks, particularly when lifting and transferring patients. Studies show that male physiotherapists experienced more complaints in their hands, wrists, and thumbs than female physiotherapists, which may be related to the fact that they used more mobilization and manipulation techniques. Pregnancy-related stress is also experienced by women, and it frequently affects the lower back because of altered spinal alignment and weakened joint structures. Postnatal care and core muscle strengthening can be used by female physiotherapists to avoid aberrant spinal postures after pregnancy. The

frequency of WMSDs among physiotherapists was significant, and the lower back, neck, upper back, and shoulders were the most often afflicted areas. The knee joint in the lower extremities was frequently impacted. WMSDs in physiotherapists have been linked to a number of risk factors, some of which are controllable (Desai & Shah, 2021).

The researcher observed that Men made up the majority of the respondents (n: 85, or 65.4%), and the average age and body mass index (BMI) for all respondents were 31.1 and 7.1 years, and 23.5 and 2.9 kg/m2, respectively. A study indicated that 3 out of 5 physiotherapists had LBP [n: 79 (60.8%); 95% percent confidence interval (CI): 52.4-69.2]. Physiotherapists' lack of maintaining proper posture, their preferred position during practice, and the lack of lumber support on chairs were all revealed to be substantially linked variables with LBP. Men made up the majority of the respondents (n: 85, or 65.4%), with a mean age and body mass index (BMI) of 31.1 7.1 years and 23.5 2.9 kg/m2 respectively. Researchers discovered that LBP affected three out of every five physiotherapists (n: 79 (60.8%); 95% confidence interval (CI): 52.4-69.2). Among physiotherapists, it was discovered that improper posture maintenance, the posture that occurred most frequently during practice, and a lack of lumber support on the chair were all substantially linked factors with LBP (Mondal et al., 2016).

According to the researcher Among the 414 respondents, WRMDs were reported by 82.6% within the previous two years, with the lower back being the most frequently impacted region (68.8%). A WRMD was reported by more than half of the PTs (54,8%) who said it happened in a private environment. Age (AOR = 0.78; 95% CI = 0.66, 0.91) and years of physiotherapy practice experience (AOR = 1.26; 95% CI = 1.07, 1.49) were significant predictors for WRMDs. Regarding the injury, 73.9% of the respondents said they didn't formally report it, and 55.8% of them said they missed a full day or more of work as a result (Khairy et al., 2019).

The researcher observed that the study was limited to 338 bankers, which resulted in a 307 (93.6%) response rate. According to nonparticipants, the reason for the nonresponse was a lack of time. A total of 307 bankers took part in the study, with 198 (64.5%) of them being male and 201 (65.9%) being between the ages of 20 and 29. The majority of participants (175, or 57%) were single and had an average age of 29 5 years. In terms of the employment structure, the majority of them were tellers (210, or 68.4%), and roughly 216, or 70.4%, had less than or equivalent to five years of experience. The participants' mean annual income was 7990.28 birr (plus or minus 3092) and the majority of them (220, or 71.7%) received salaries between 5,000 and

10,000 birr. In terms of education, 243 (79.2%) of the participants had a bachelor's degree, and 300 (97.7%) of them were Orthodox (Kibret et al., 2020).

Physical therapy can reduce the recurrence of back pain and neck-shoulder Pain. In order to be effective, however, the exercise should include vigorous exercise. And be repeated at least three times a week (Podniece, 2008). Physical Therapist assess an individual's physical ability to do a specific job or activity and aids in developing a safe return to work program. All exercises should be performed slowly and comfortably to avoid injury. When performing strengthening and flexibility exercises, remember to breathe naturally and do not hold your breath; exhale during exertion and inhale during relaxation. A program of strengthening, stretching, and aerobic exercises will improve your overall fitness level. Research has shown that people who are physically fit are more resistant to back injuries and pain and recover quicker when they do have injuries than those who are less physically fit (Healthy Back Exercises: Strengthen and Stretch, 2011).

Strengthening exercises help increase muscle tone and improve the quality of muscles. Muscle strength and endurance provide energy and a feeling of wellness to help you perform daily, routine activities. Adequate core strength that comes from abdominal and back muscles helps stabilize the spine, allows proper spinal movement, and makes it easier to maintain correct posture. Strong hip and leg muscles are important to perform proper lifting techniques and body mechanics. Flexibility is the ability to move arms and legs through their full range of motion. Stretching will help improve your flexibility. Adequate flexibility of tissues around the spine and pelvis allows full, normal spinal movement, prevents abnormal force on the joints and decreases the possibility of injury. Stretching also prepares muscles for activity; stretching should be done both before and after each vigorous workout to prevent muscle strain and soreness and to help avoid injuries. When performing flexibility exercises, stretch as far as you can and hold the stretch for 10 seconds and then ease back. Each stretching exercise should be performed slowly in both directions, with no sudden jerking or bouncing. Bouncing is more likely to injure or strain a muscle or joint (Healthy Back Exercises: Strengthen and Stretch, 2011).

Use equipment that isn’t too heavy, that can be used without awkward upper body posture and that feels comfortable to use. Ergonomically designed equipment helps to minimize stresses on the upper extremities and the back. Avoid long appointments where possible, or intersperse these with frequent short rest breaks in

which you change posture and relax the upper extremities (Tanya et al., 2008).

CHAPTER-III METHODOLOGY

3.1: Study Design:

The purpose of the study was to Identify the worked-related musculoskeletal disorders among the physiotherapist in Dhaka city and Savar upazila. The design of the study was descriptive cross-sectional. The descriptive cross-sectional study design is usually cheaper and quicker and confounding variables can be controlled for during data analysis.

3.2: Study Area:

The data were collected from Saic physiotherapy & rehabilitation services, National Institute of Traumatology and Orthopedic Rehabilitation (NITOR), SAIC College of Medical Science and Technology (SCMST), Bangladesh Council For Child Welfare- Firoza Bari Disable Children Hospital, Gonoshasthaya Samaj Vittik Physiotherapy College, Gonoshasthaya hospital savar, Academy of physiotherapy, Movement Solution BD, Vision Physiotherapy Center Uttara, Olive's Physiotherapy Center, Uttara Physiotherapy Center, Uttara physiotherapy and autism center, Enam Medical College & Hospital, Rehab Max Physiotherapy Center Savar, Center for rehabilitation services (CRS) that within Dhaka city and Savar upazila.

3.3: Study period

The duration of the study was 6 months form 3rd January 2023 to 31th July 2023

3.4: Study population:

All physiotherapists in Dhaka city and Savar upazila were the population of this study. A population refers to the members of a clearly defined set or class of people, objects or events that are the focus of the investigation.

3.5 Sample size

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

Here,

Z = 1.96

P = Prevalence = 85.5% (Hossain et al., 2022)

=0.855

q = 1-P

d = Confidential interval = 0.05

According to standard formula, sample size will be,

$\frac{z^2Pq}{d^2}$ = [(1.96) ^{2} ×0.855×0.145] ÷ (0.5)^2 = 191

So, sample size is 191.

So, the initial sample size is 191. But limitation of as this research, the feasible 129 samples were selected for this study.

3.6 Sampling Technique

Applied convenience sampling technique for collecting sample.

3.7 Data Collection Procedure

Data collection procedure will involve face to face interview of physiotherapist with help of interviewer administered structured questionnaire.

- **Tools:** Questionnaire, consent paper, checklist, measurement scale/Tools.
- **Method:** Face to face interview**.**

3.8 Data Analysis

The data will be analyzed with the Microsoft Office Excel 2019 with SPSS 25 version software program.

3.9 Inclusion criteria

- Consists of in the Dhaka city and Savar upazila with the age of 21-59 years.
- Those who was working for at least 3 months to 6 months.

3.10 Exclusion criteria

- The subject who was not willing to participant in the study.

3.11 Ethical consideration

Followed all kinds of ethics and I would take a permission from ethical board of SAIC College of Medical Science and Technology (SCMST) before starting data collection. The investigator was obtain written permission from ethical review board (SCMST). ethical review board informed by written document about aims and objectives of the study and that the Physiotherapist of the study was not harmed or the

clients name, address and personal information will be kept confidential by the investigator mentally and the dates was not be shared with others. All the participants and authority will be informed about the purpose of the study, the process of the study and their written consent will be obtained. All the interviews will be taken in a confidential to maximize the participant's comfort and feelings of security. The researcher has permission from the research supervisor, physiotherapy Department. The researcher is to ensuring the confidentiality of participants' information, sharing information only with the research supervisor.

3.12: Informed consent

A consent form was provided for this study, and the subject was verbally informed of the research's aims and the consent process. Participants may withdraw at any time and participation was purely optional. Additionally, participants received assurances that their privacy would be protected. Though they won't be named, information may be published in any writing or presentations. The findings of the study might not directly affect them, but they might one day be of use to the population of physiotherapists. The study wouldn't make them feel bad.

3.13 Budget:

I was bearing my all expenses in my own and will not take from others.

3.14 Rigor:

It was always aimed to avoid introducing personal viewpoints, values, and biases during the data collecting and processing. No judgements were made, and no leading questions were asked. When conducting the study, the researcher was taken help from the supervisor when needed. Researcher always tried not to influence the process by his own value and biases. No leading question were asked or no important question is avoided. The participant's information was coded accurately and checked by the research supervisor to eliminate any possible errors. The entire information was handled with confidentiality. In the result section researcher was not find influenced about outcome by showing any personal interpretation during conduct the study every section of the study is checked by the research supervisor.

CHAPTER: IV RESULT

Interpretation of results

The study aimed to identify Work-related musculoskeletal disorders among physiotherapists. The data was collected by the researcher himself. Structured questions were used with both open-ended and close-ended questions in the questionnaire. The data were analyzed with the Microsoft Office Excel 2007 with SPSS 25 version software program. In this study researcher use bar, Colum, Figure, Pie chart so show the result of the body. Because it is easier to make sense of a set of data.

4.1 Demographic Data

4.1.1: Age of participant

Regarding frequency distribution of the participant, it was found 109 (84.5%) participant belong the age group of 21-31 years: It also found that 17 (13.2%) participant were in the age group of 32-42 years. And also found that 3 (2.3%) participant were in the age group of >42 years. The Mean age of the participant was 27.84 and SD 4.410 (Table number-1)

Table no.1: Frequency distribution of the participant by age

Age Group in years	Frequency	
	N	%
21-31	109	84.5
32-42	17	13.2
>42	3	2.3
Total	129	100.00

Mean age =27.84, SD= 4.410

4.1.2 Gender of participant

In this study 68 (52.7%) participant were male and 61 (47.3%) participant were female.

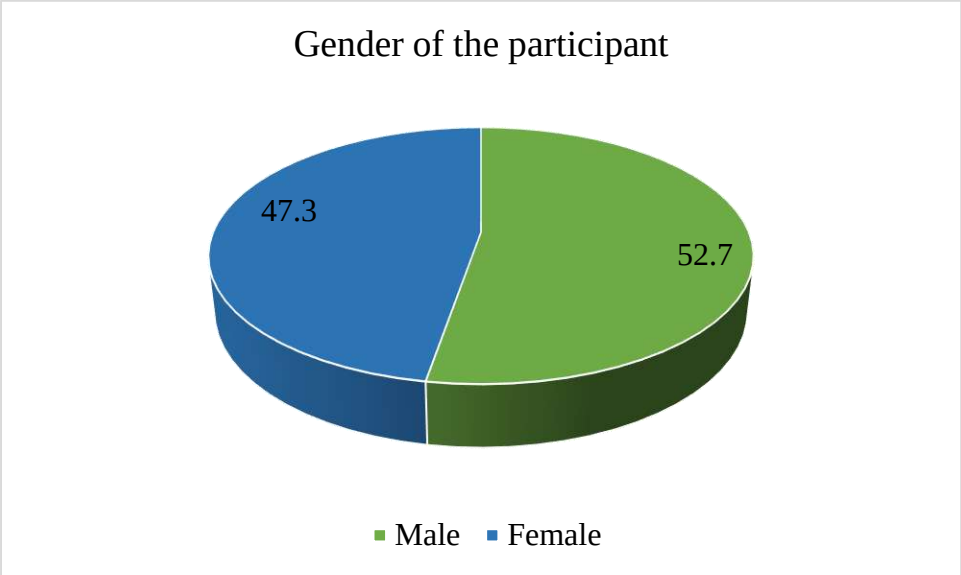


Figure-1: Gender of participant

4.1.3: Living area of the participant

In this study 8 (6.2%) participant were living in rural, 21 (16.3%) participant were living in semi urbanand 100 (77.5%) participant were living in urban.

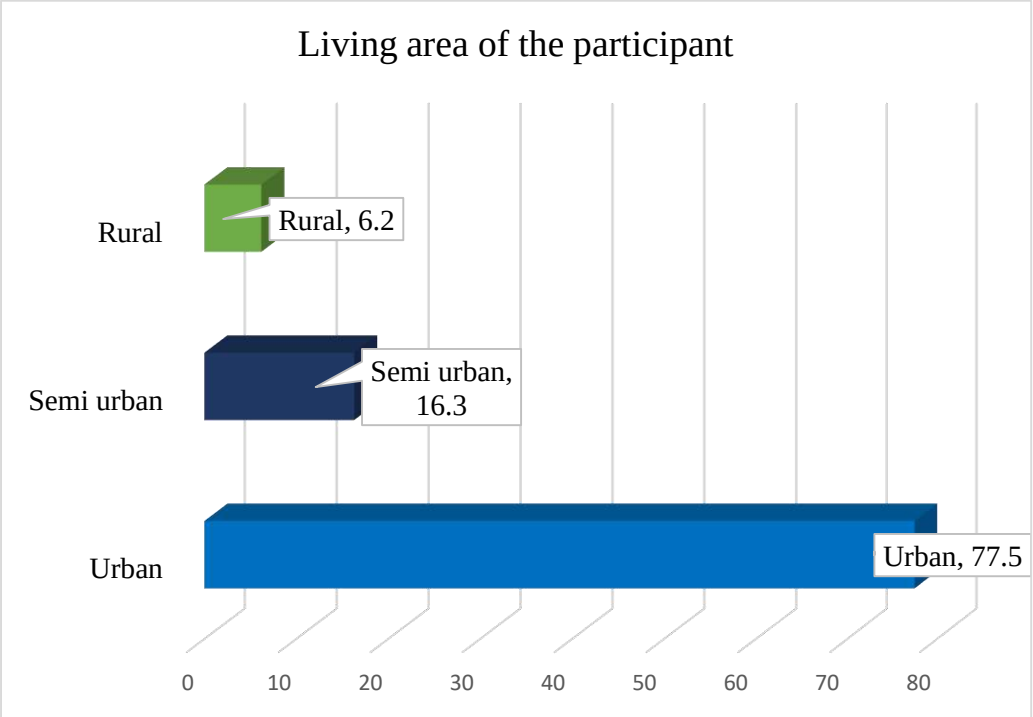


Figure-2: Living area of the participant

4.1.4: Educational qualification of the participant

In this study 101 (78%) participant were Graduate and 28 (22%) participant were post-graduate.

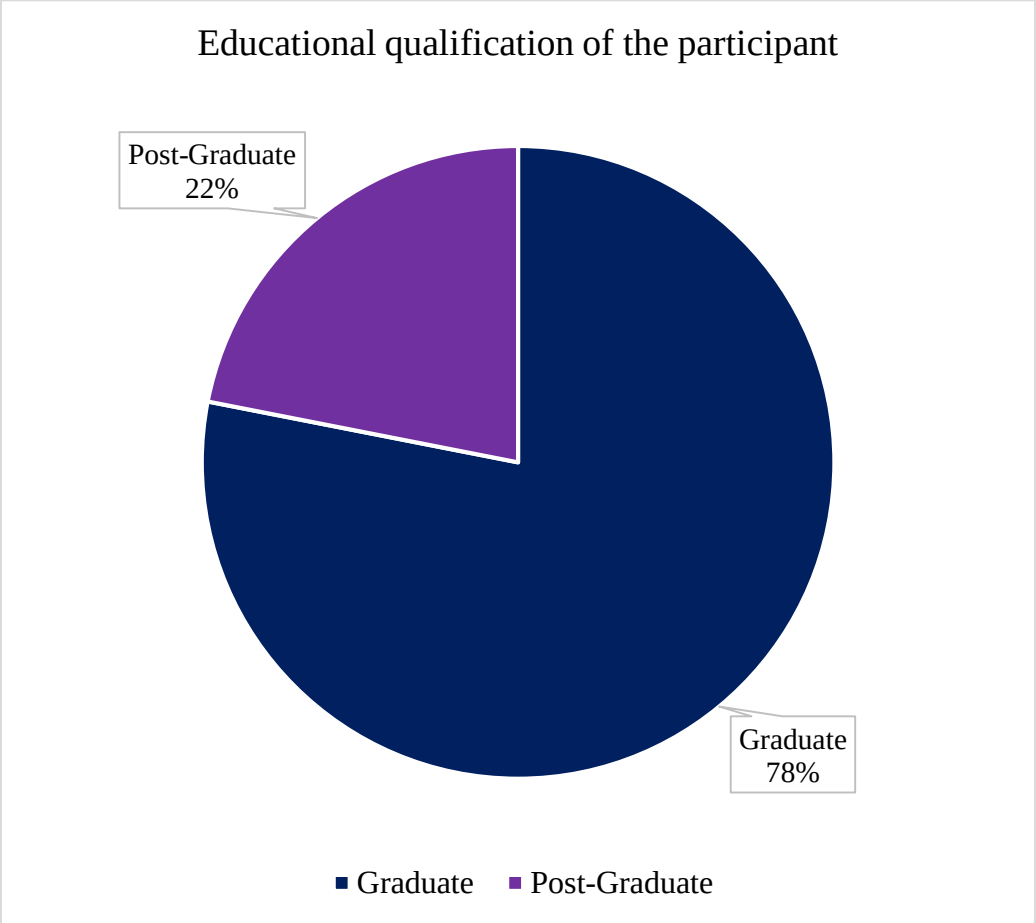


Figure-3: Educational qualification of the participant

4.1.5: Type of work of the participant

In this study participant were 48(37.2%) internship, 7(5.4%) were Both teaching and chamber, 2(1.6) were Teaching, 12 (9.3) were both service and chamber, 20 (15.5%) were Chamber practice, 38(29.5%) were Private service and 2 (1.6%) were Government service.

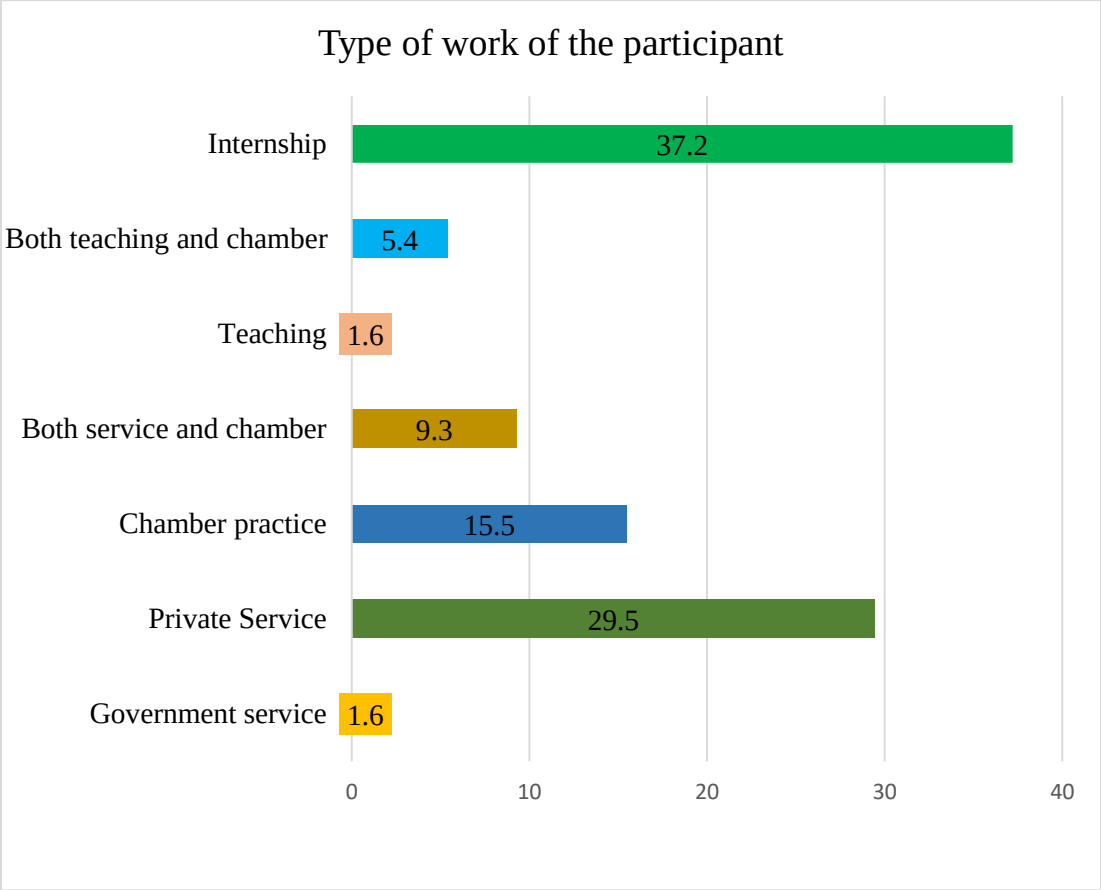


Figure-4: Type of work of the participant

4.1.6: Work setting of the participant

In this study 13 (10.1%) were working in government hospital, 28 (21.7%) were working in Rehabilitation center, 32 (24.8%) were working in Private hospital, 1 (0.8%) were working in Special school, 40 (31.0%) were working in private chamber and 15 (11.6%) were NGO.

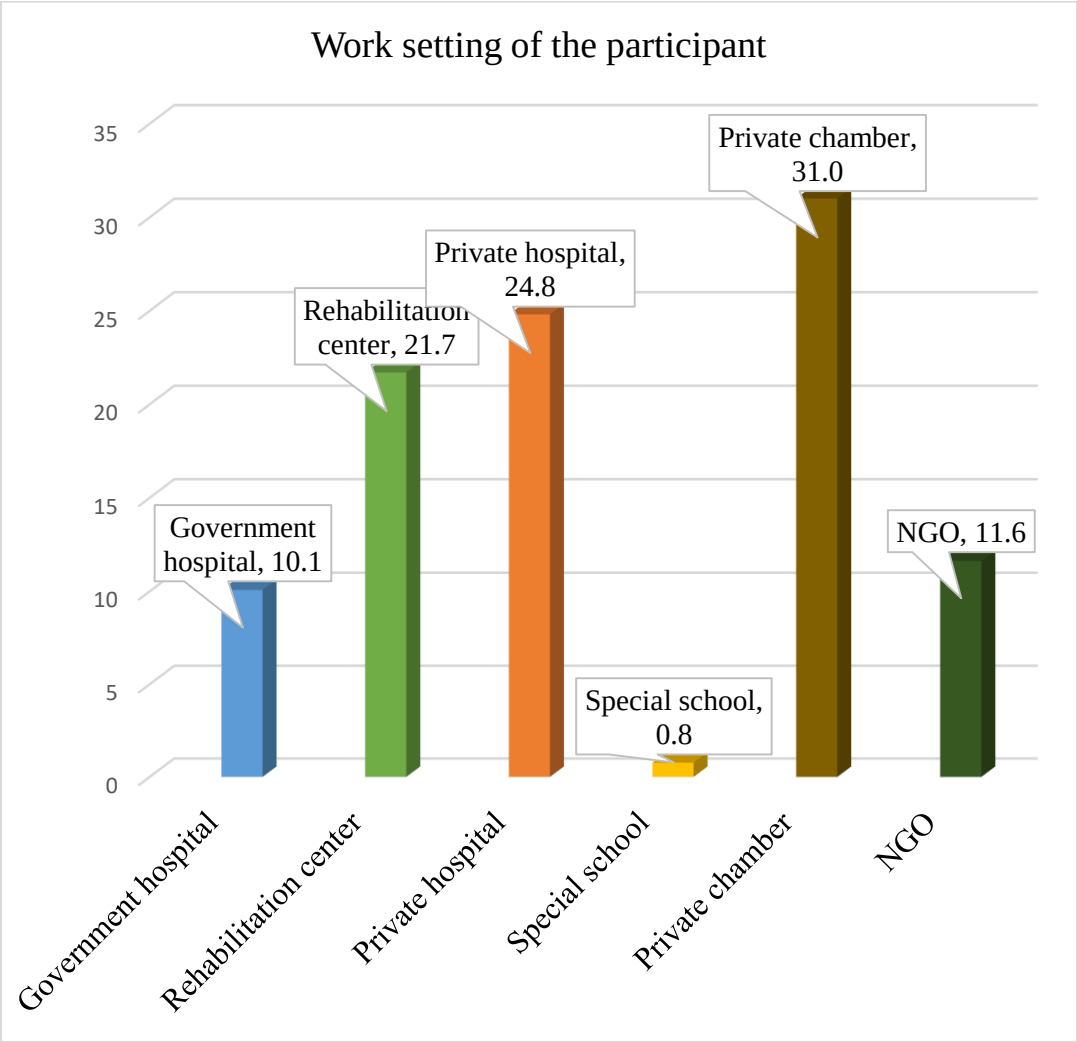


Figure-5: Work setting of the participant

4.1.7: Gross monthly income of the participant

This study's participant means and standard deviation of participant income was Mean ±SD= 28589.55±.31511.438; here 0-40000 taka were104 (80.6%), 41000-81000 taka were 14 (10.9%) and >81000 taka were 11 (8.5%), of the participant.

Amount	**Frequency**	**Percentage**	**Mean**	**SD**
0-40,000	104	80.6%	28589.55	31511.438
41,000-81,000	14	10.9%		
>81000	11	8.5%		
Total	129	100%		

Table no- 2: Gross monthly income of the participant

4.1.8: BMI of the participant

In this study 4 (3.1%) were underweight, 81 (62.4%) were normal, 37 (62.8%) were overweight, 5 (3.9%) were obese, 2 (1.6%) were extremely obese.

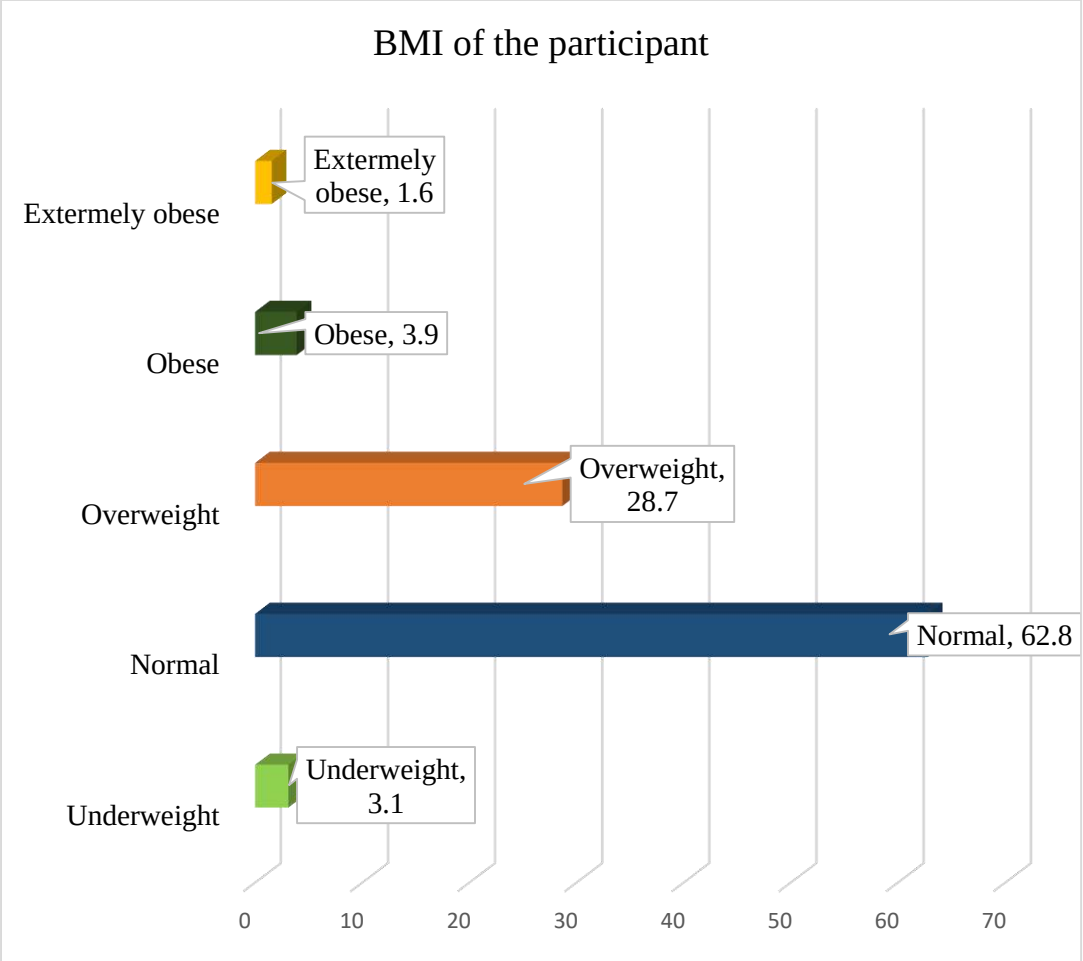


Figure-6: BMI of the participant

4.2: Questions regarding professional practice

4.2.1: Designation of the participant

In this study 9 (7.0%) were consultant, 21 (16.3%) were senior physiotherapist, 47 (36.4%) were clinical physiotherapist, 51 (39.5%) were Intern and 1 (0.5%) were others.

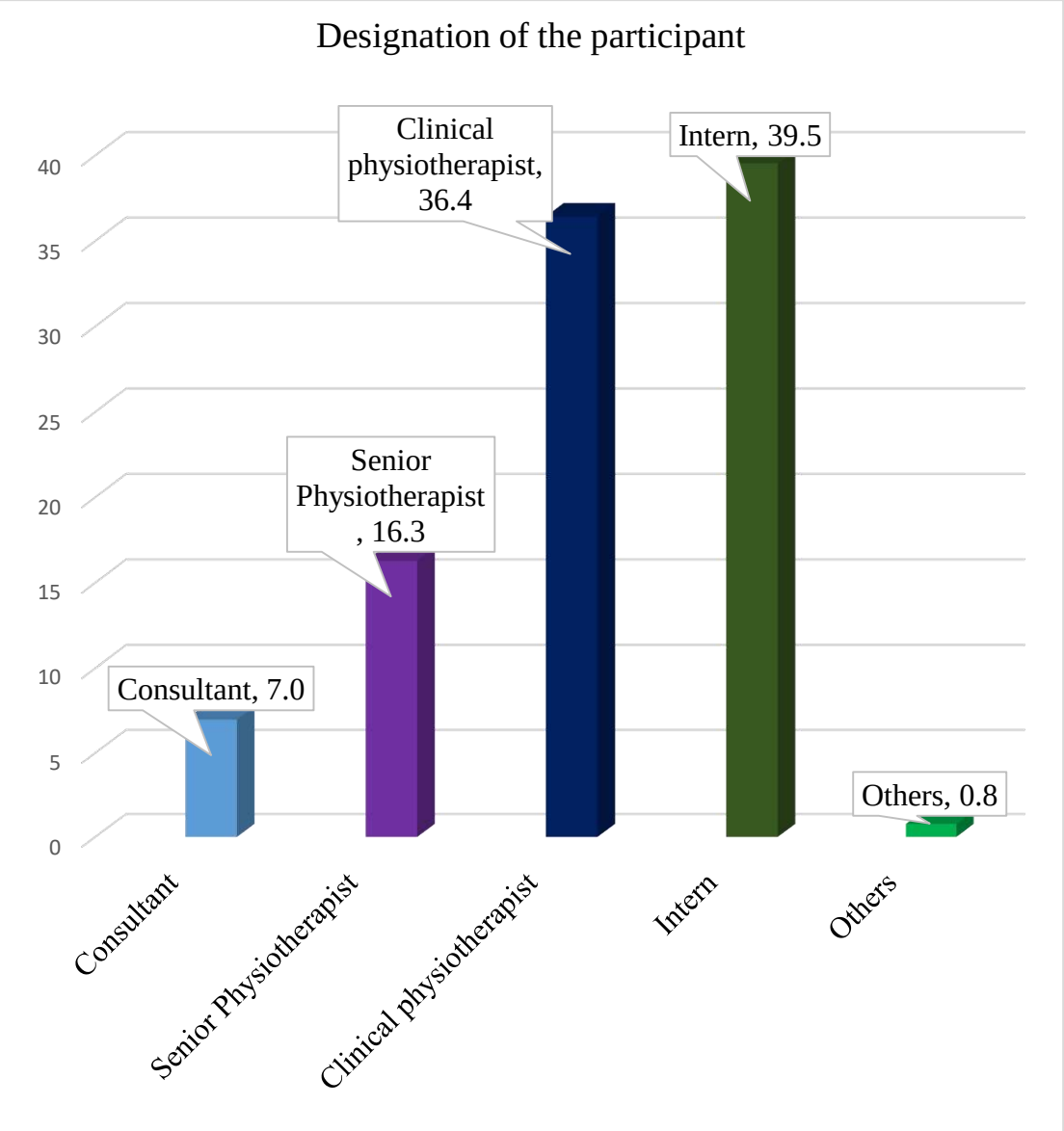


Figure-7: Designation of the participant

4.2.2: Professional experience of the participant

In this study 66 (51.2%) were <1 year, 34 (26.4%) were 1-5 years, 20 (15.5%) were 6-10 years and 9 (7.0%) were >10 years professional experience of the participant.

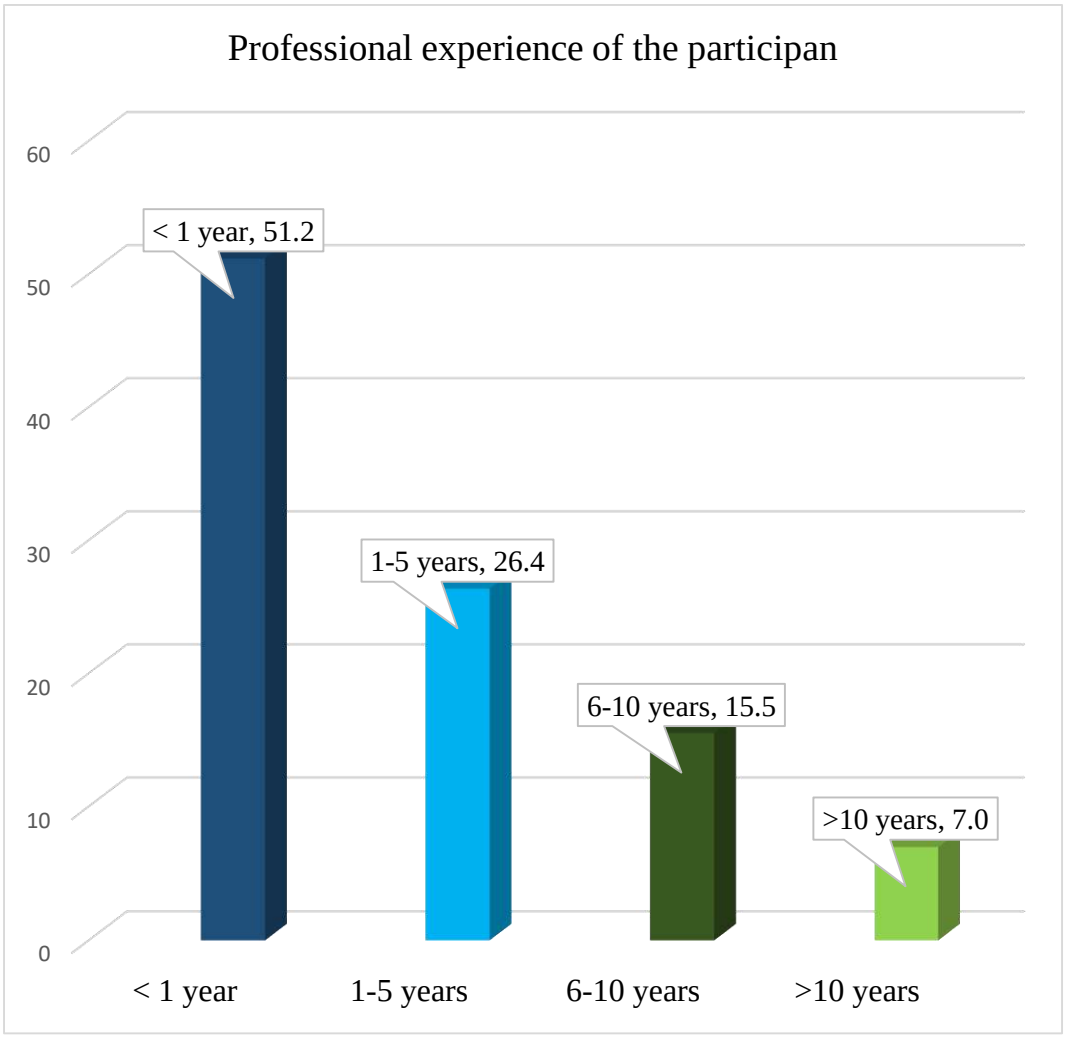


Figure-8: Professional experience of the participant

4.2.3: Duration of practice hours per day of the participant

In this study 25 (19.4%) were <5 hours, 68 (52.7%) were 6-8 hours, 35 (27.1%) were 8-12 hours and 1 (0.8%) were >10 hours duration of practice hours per day of the participant

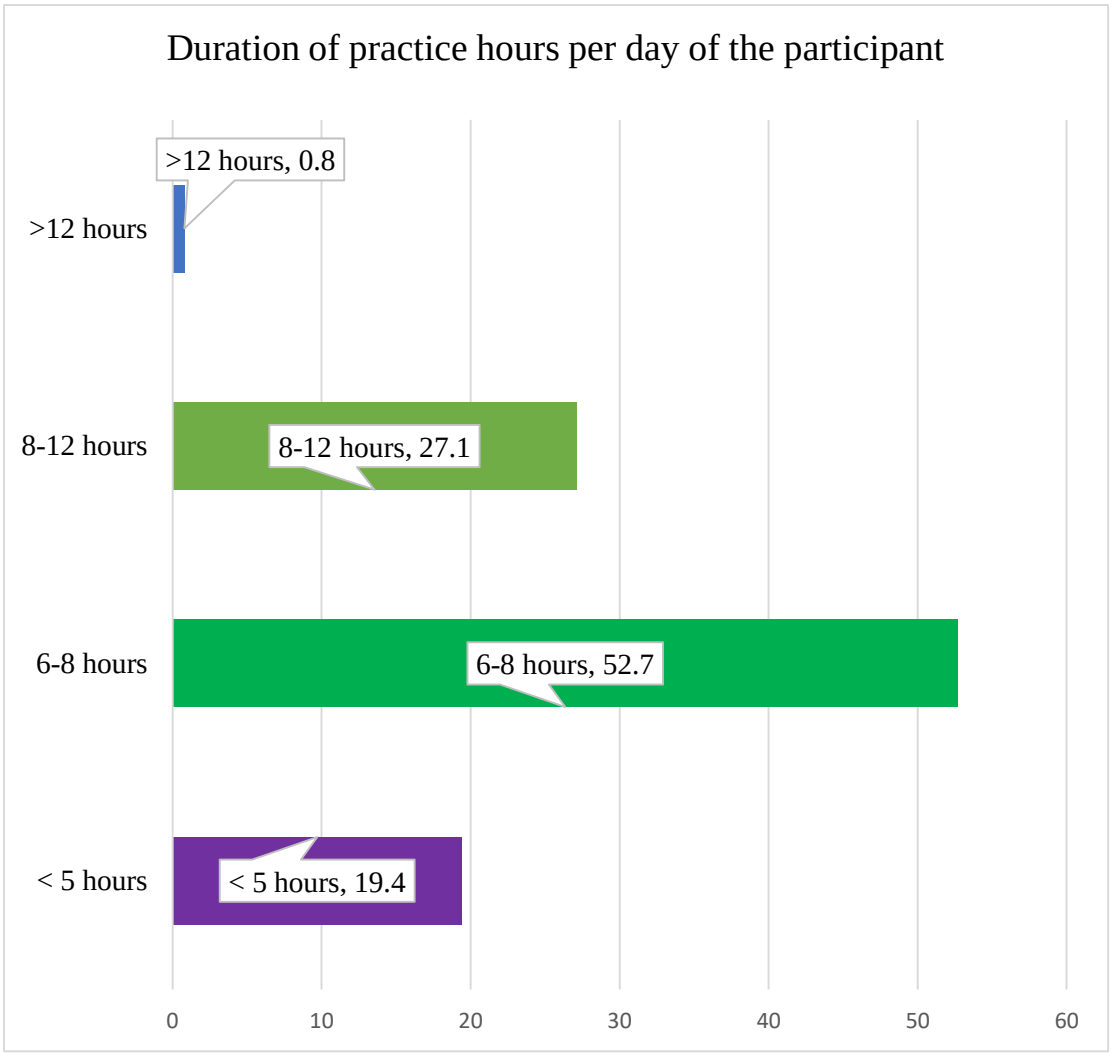
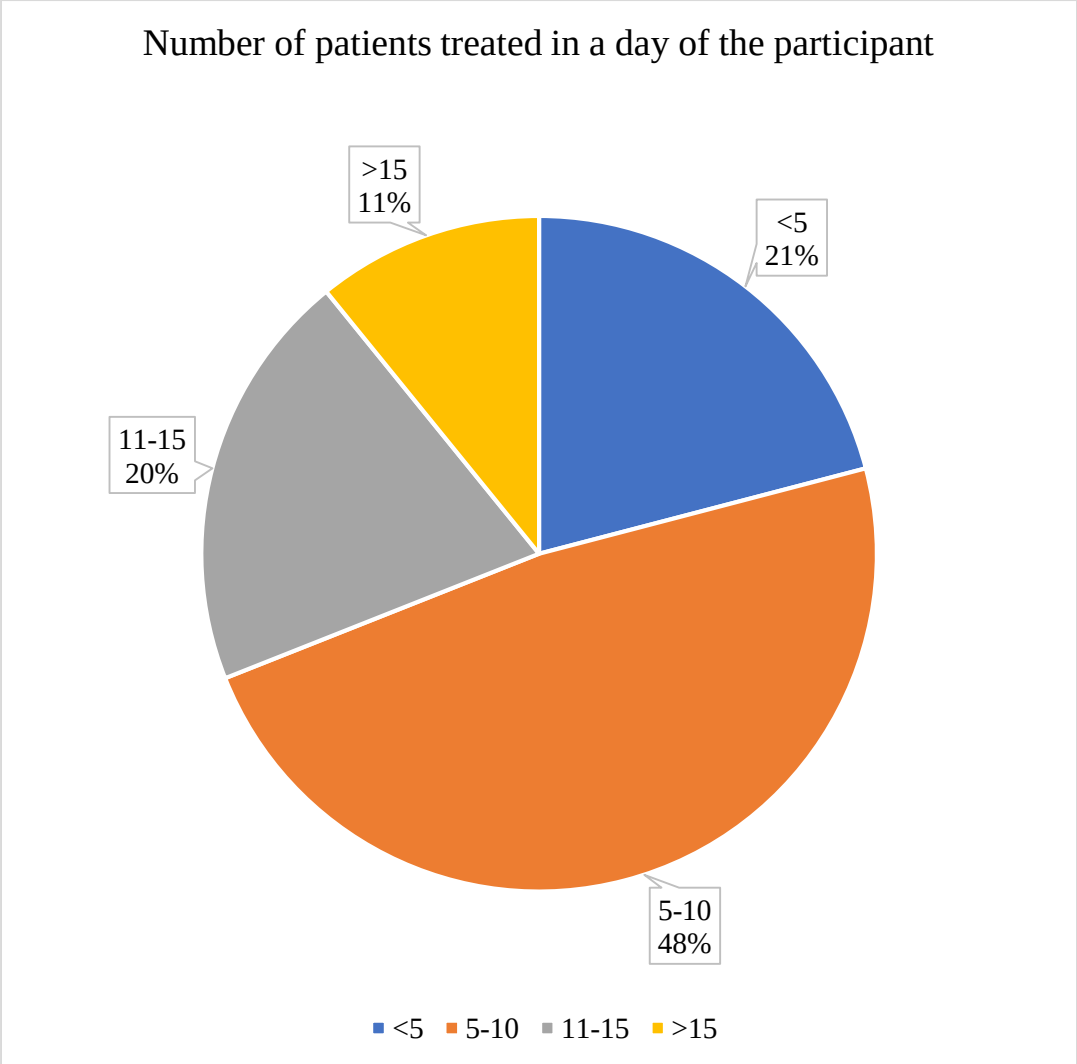


Figure-9: Duration of practice hours per day of the participant

4.2.4: Number of patients treated in a day of the participant

In this study n=27 (20.9%) were <5 patients, n=62 (48.1%) were 5-10 patients, n=26 (20.2%) were 11-15 patients and n=14 (10.9%) were >15 number of patients treated in a day of the participant



Fogure-10: Number of patients treated in a day of the participant

4.2.5: Type of patients were do treated usually of the participant

In this study 2 (1.6%) were Patient with neurological disorders, 42 (33.3%) were Patient with musculoskeletal disorders, 11 (28.5%) were Patient with pediatric disorder and 72 (56.6%) were General (all types) type of patients do treat usually of the participant.

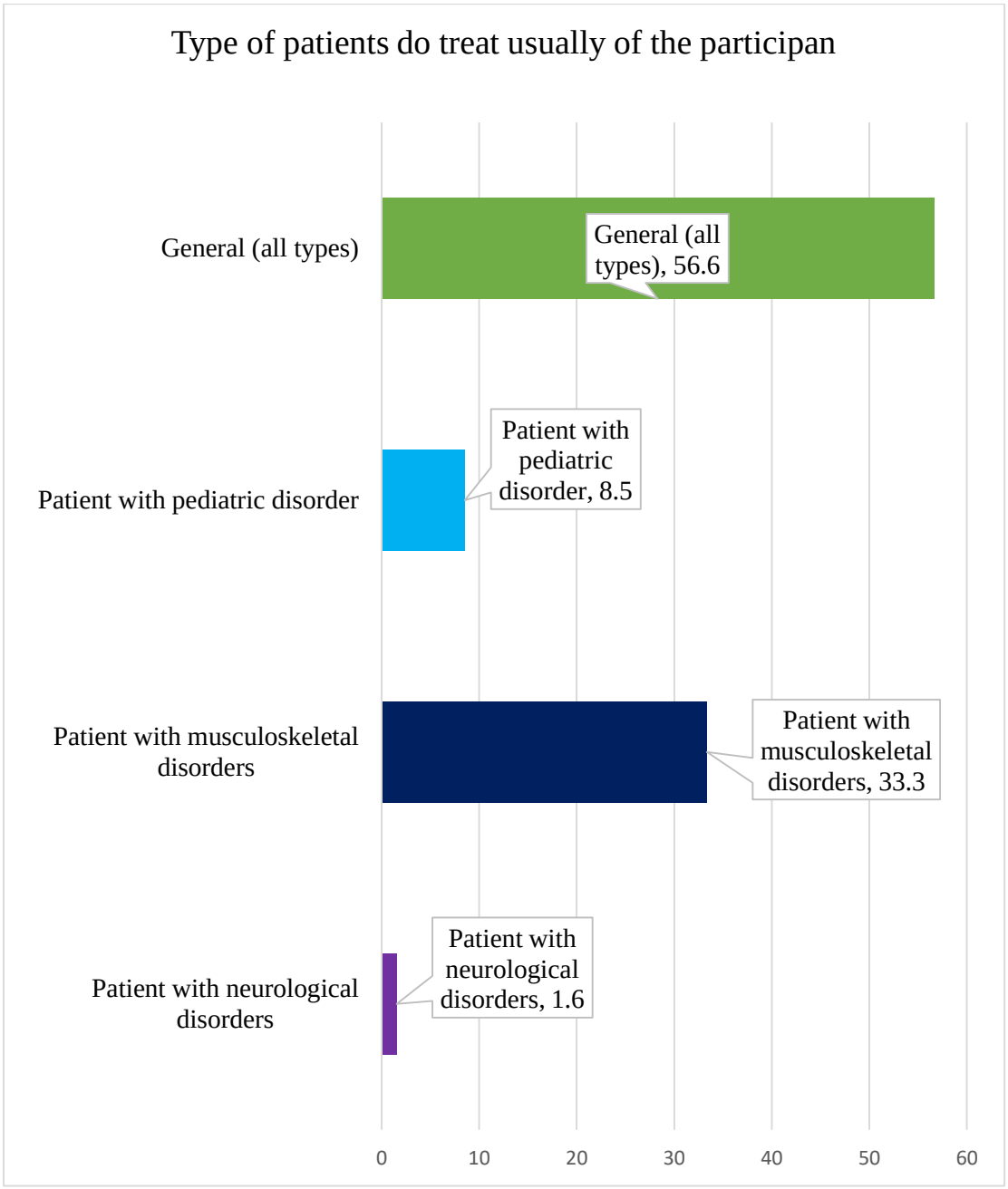


Figure-11: Type of patients do treat usually of the participant

4.3: Question regarding musculoskeletal pain

4.3.1: Currently have any pain in the body of the participant

In this study 89 (69%) were pain and 40 (31%) were no pain currently any pain in the body of the participant.

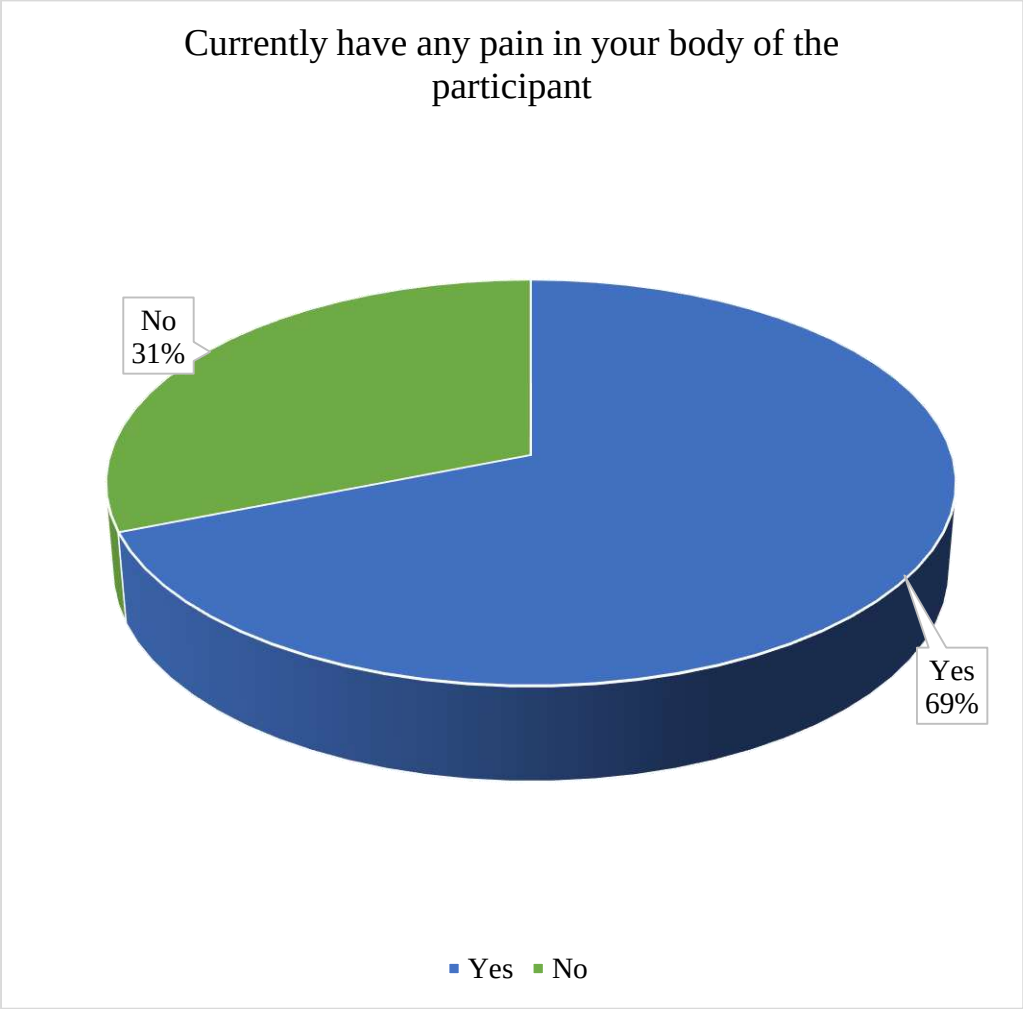


Figure- 12: Currently have any pain in the body of the participant

4.3.2: Pain experience of the participant

In this study 15 (11.6%) were 1 week, 20 (15.5%) were 1 month, 20 (15.5%) were 6 months, 15 (11.6%) were 1 year, 24 (18.6%) for as long as I can remember and 35 (27.1%) were none pain experience of the participant.

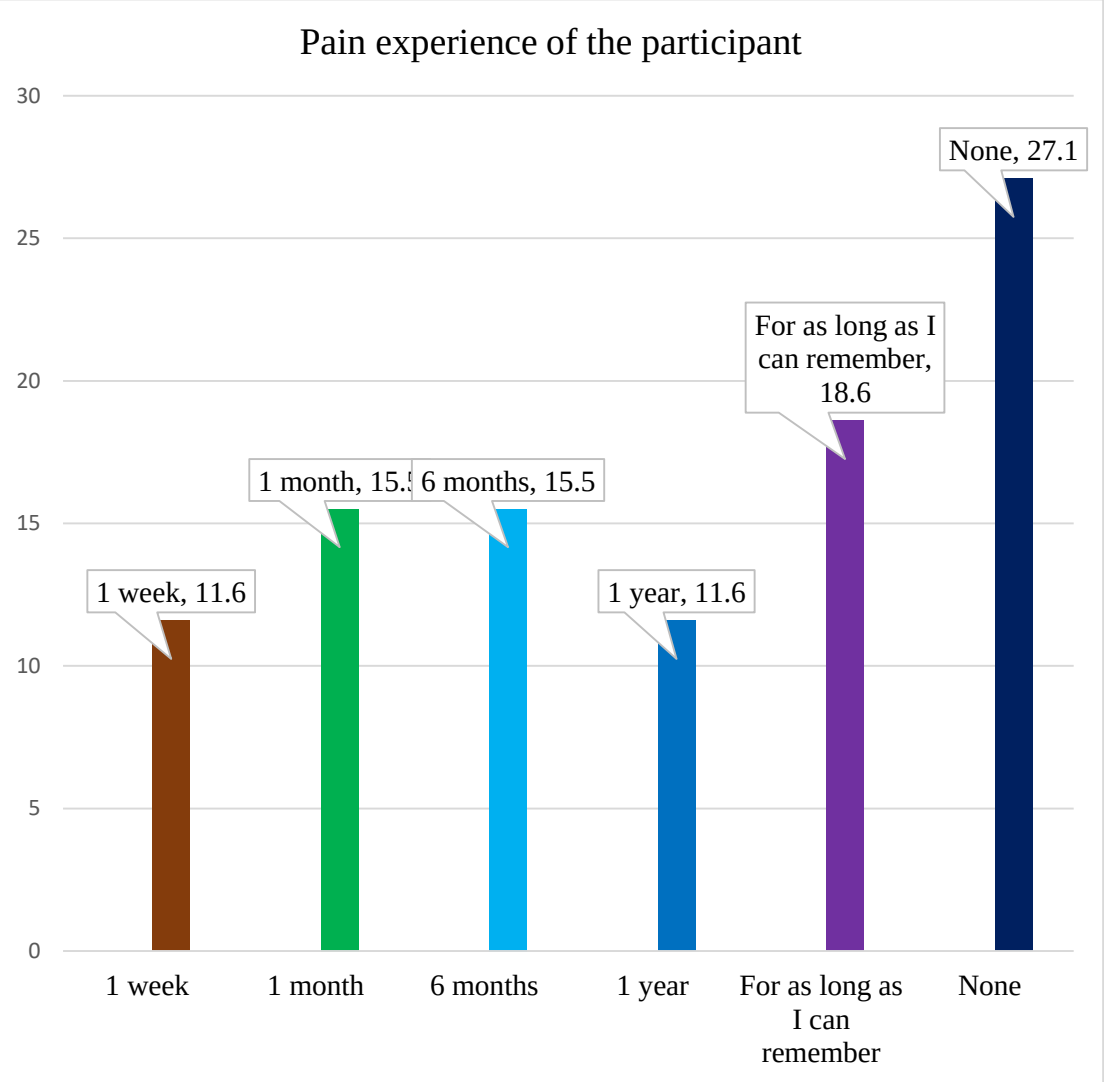


Figure-13: Pain experience of the participant

4.3.3: Grade of pain of the participant by NRS

In this study 37 (28.7%) were no pain (0), 68 (52.7%) were mild (1-3), 22 (17.1%) were moderate (4-6) and 2 (1.6%) were severe pain by grade of pain of the participant by NRS.

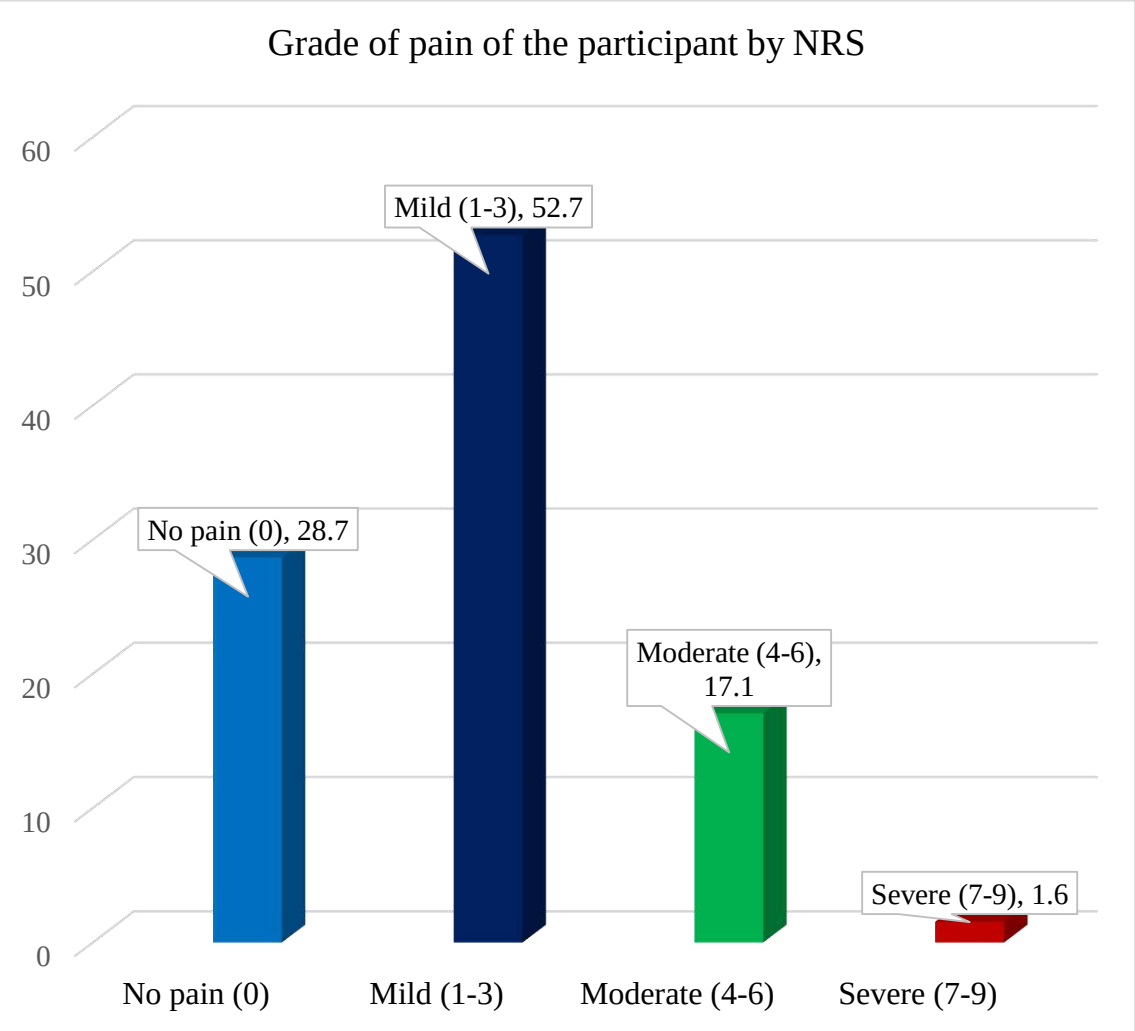


Figure-14: Grade of pain of the participant by NRS

4.3.4: Treatment procedure for the pain of the participant

In this study 60 (46.5%) were yes, 41 (31.8%) were no, 28 (21.7%) were Unnecessary, I do not experience any pain for treatment procedure for your pain of the participant.

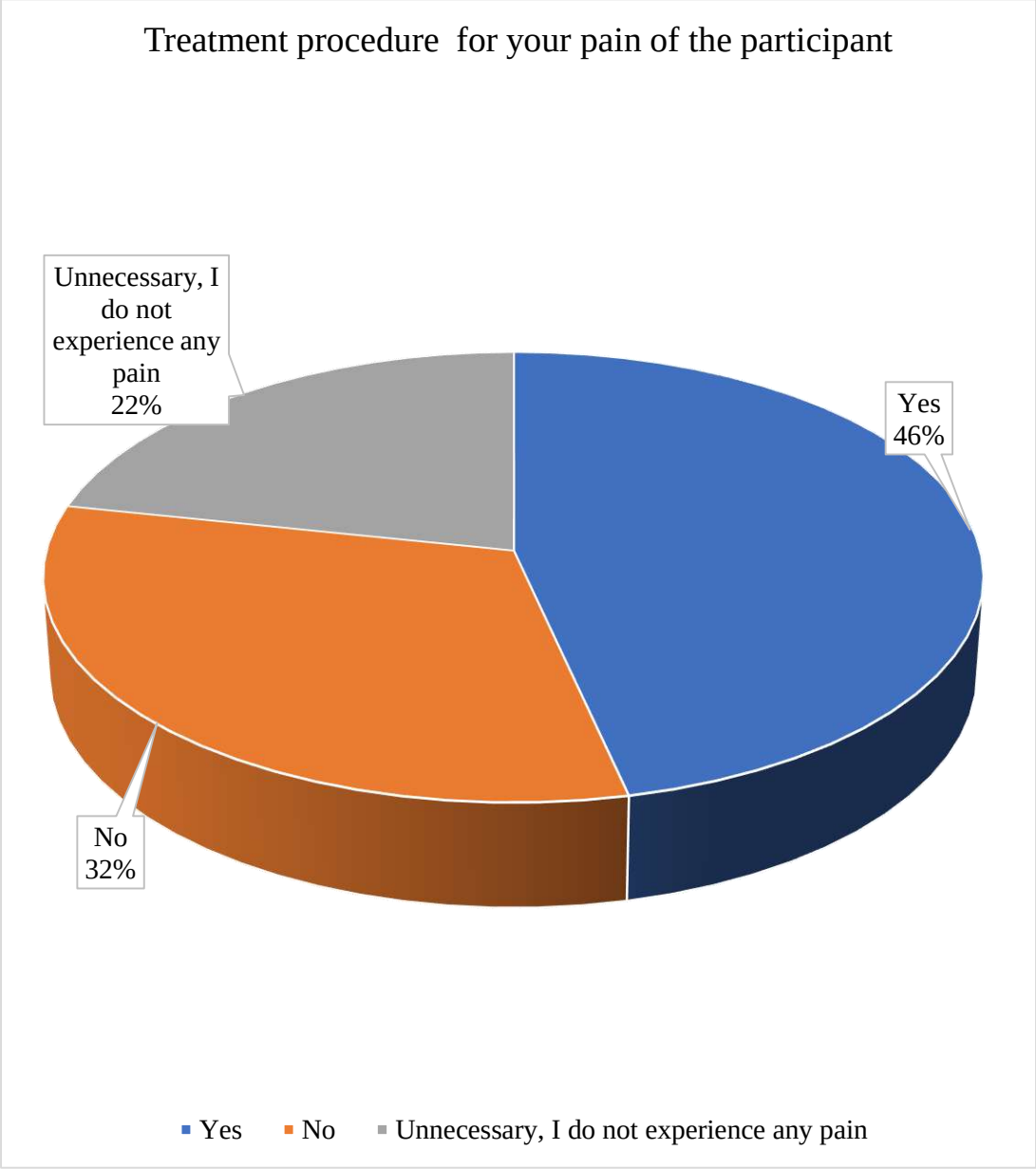


Figure-15: Treatment procedure for the pain of the participant

4.3.5: Pain affects your daily activities of the participant

In this study 55 (43%) were yes, 74 (57%) were no Pain affects your daily activities of the participant.

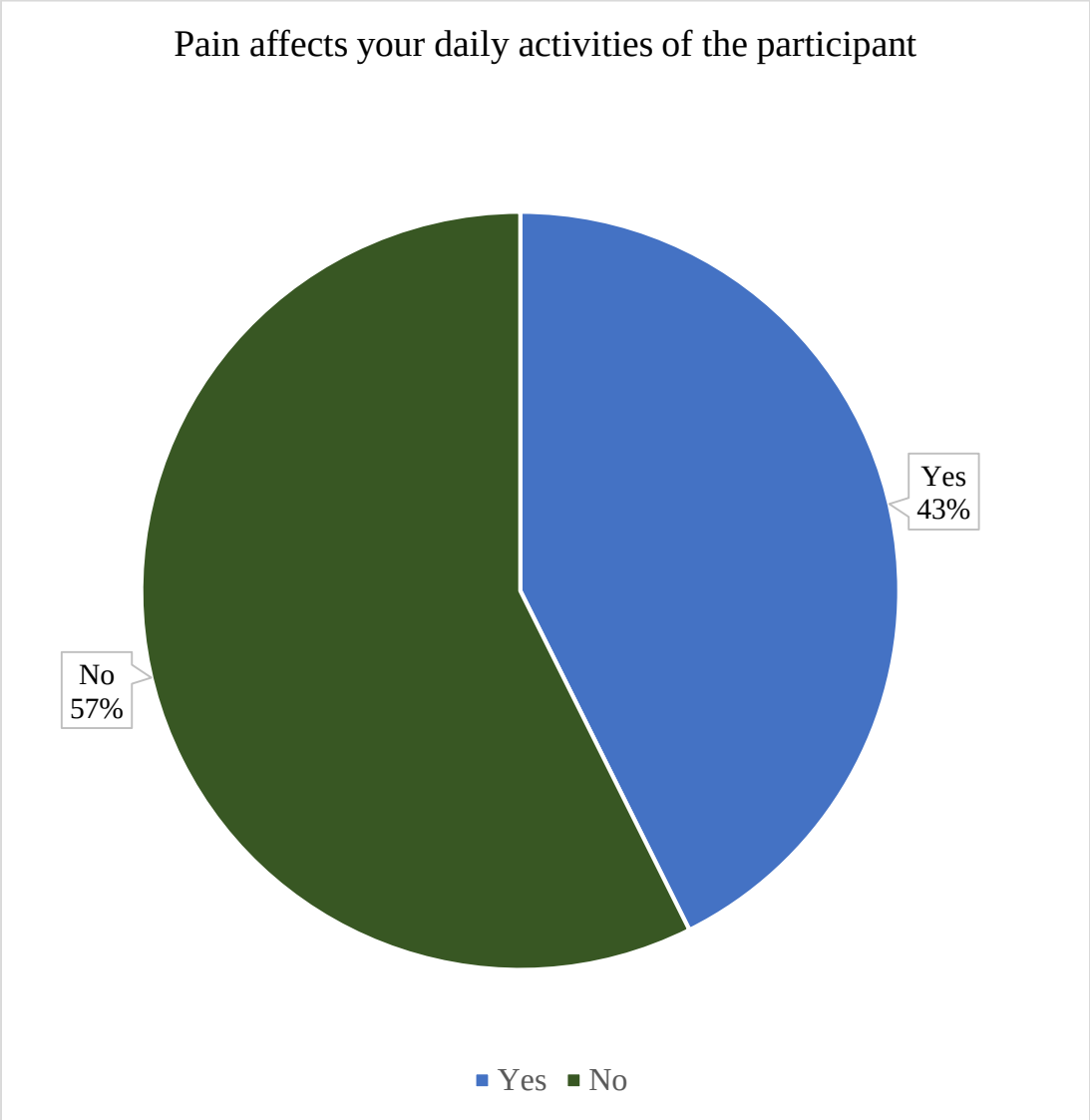


Figure-16: Pain affects your daily activities of the participant

4.3.6: Health related quality of life of the participant

In this study 33 (25.6%) Excellent, 25 (19.4%) were very good, 48 (37.2%) were good, 18 (14.0%) were fair and 5 (3.9) were poor by health related quality of life health related quality of life of the of the participant.

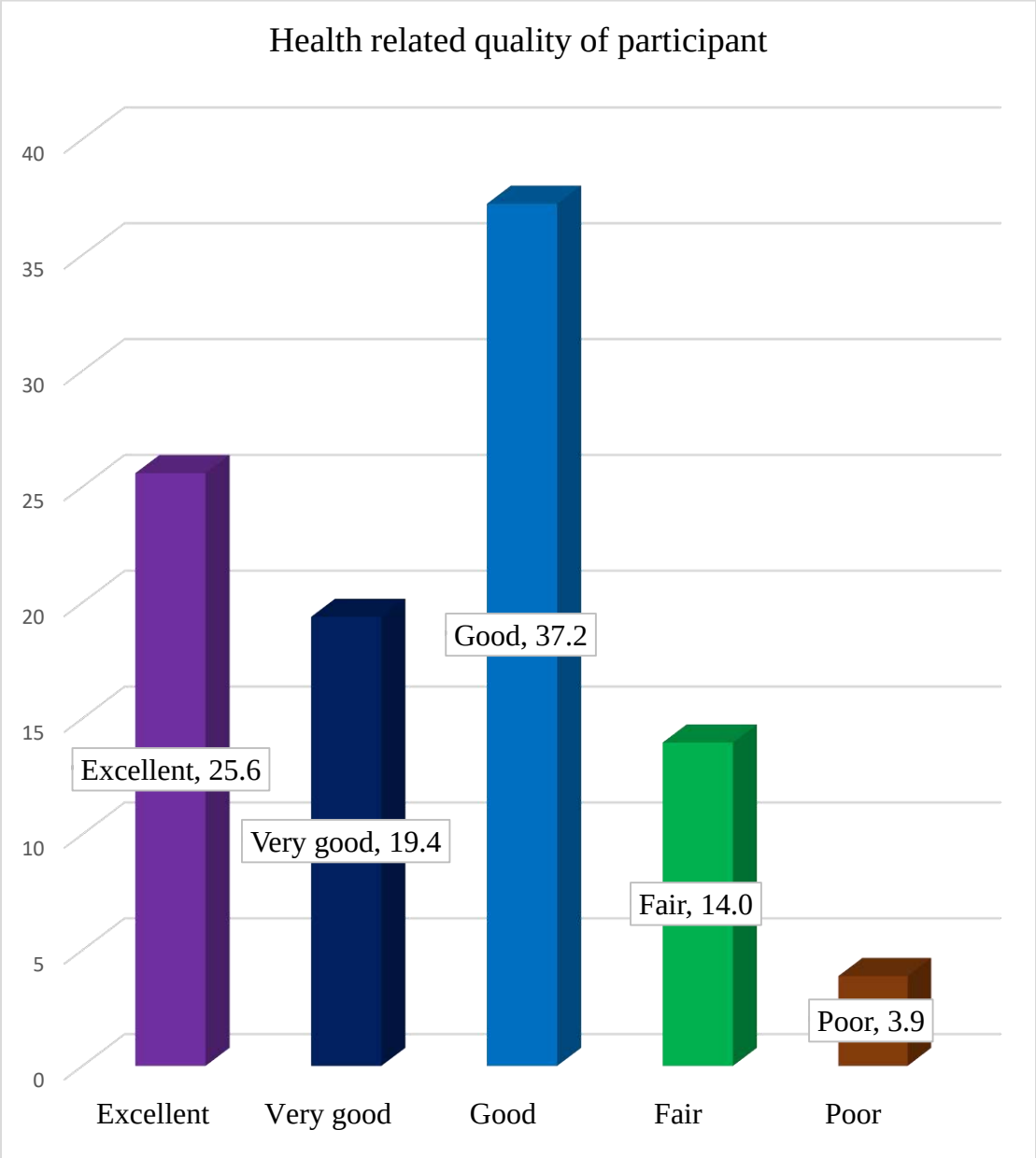


Figure-17: Health related quality of participant

4.4: Nordic Musculoskeletal Question

4.4.1: Have any time last 12 months had trouble (ache, pain, discomfort) of the participant

In this study 56 (43.4%) were neck pain, 12 (9.3%) were right shoulder, 5 (3.9%) were left shoulder, 6 (4.7%) were both shoulders pain, 7 (5.4%) were right wrist, 2 (1.6%) wee left wrist, 1 (0.8%) were both wrist pain, 34 (26.40%) were upper back pain, 64 (52.7%) were lower back pain, 6 (4.7%) were right hip, 2 (1.6%) were left hip, 7 (5.4) were both hips pain, 11 (8.5%) were right knee, 3 (2.3%) were right knee, 3 (2.3%) were both knees pain, 4 (3.1%) were right ankle, 3 (2.3%) were left ankle and 4 (3.1%) were both ankles pain.

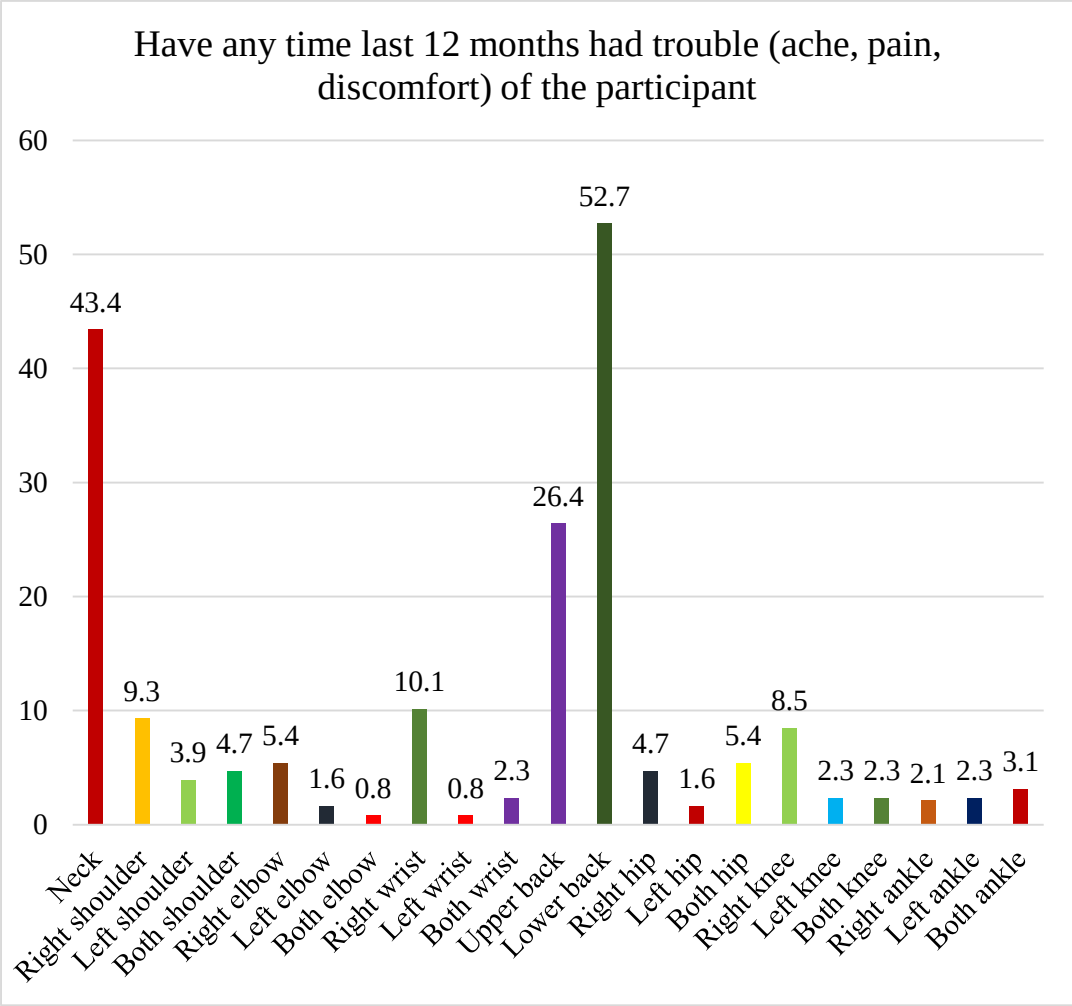


Figure-18: Musculoskeletal trouble in last 12 months.

4.4.2: Musculoskeletal disorders hampering normal work (at home or away from home) in last 12 months of the participant:

In this study 36 (27.9%) were neck pain, 14 (10.9%) were shoulder pain, 12 (9.3%) were wrist pain, 4 (3.1%) were elbow pain, 18 (14.0%) were upper back pain, 45 (34.9%) were lower back pain, 5 (3.9%) were right hip pain, 10 (7.8%) were knees pain, and 10 (7.8%) were ankles pain of last 12 months been prevented from doing normal work (at home or away from home) because of the trouble of the participant

Table no.3: Musculoskeletal disorders hampering normal work (at home or away from home) in last 12 months of the participant

Name	Frequency (n)	Percentage (%)
Neck	36	27.9%
shoulders	14	10.9%
Elbow	12	9.3%
Wrist	4	3.1%
Upper back	18	14.0%
Lower back	45	34.9%
Hips	5	3.9%
Knees	10	7.8%
Ankles	10	7.8%

4.4.2: Musculoskeletal disorders hampering normal work (at home or away from home) in last 7 days of the participant:

In this study 35 (27.1%) were neck pain, 12 (9.3%) were shoulder pain, 9 (7.0%) were elbow pain, 4 (3.1%) were wrist pain, 16 (12.4%) were upper back pain, 44 (34.1%) were lower back pain, 4 (3.1%) were hips pain, 10 (7.8%) were knees pain, and 9 (7.0%) were ankles pain of last 7 days been prevented from doing your normal work (at home or away from home) because of the trouble of the participant

Table no.3: Musculoskeletal disorders hampering normal work (at home or away from home) in last 7 days of the participant

Name	Frequency (n)	Percentage (%)
Neck	35	27.1%
shoulders	12	9.3%
Elbow	4	3.1%
Wrist	9	7.0%
Upper back	16	12.4%
Lower back	44	34.1%
Hips	4	3.1%
Knees	10	7.8%
Ankles	9	7.0%

4.4: ASSOCIATION

4.5.1: Association between age of the participant and ache, pain, discomfort in the body area during last 12 months:

The table shown that the association between age of the participant and ache, pain, discomfort in the body area during last 12 months in neck, shoulder, elbow, wrist, upper back, lower back, hips, knees, ankle their Chi value and P value respectively 3.026 and .220, 2.191 and .901, 1.117 and .305, 2.937 and .817, 1.220 and .543, .758 and .685, 1.766 and .940, 3.593 and .732, 2.206 and .900

Ache, pain, discomfort in the body area during last 12 months	**Age of the participant**			**Chi value**	**P value**
	21-31	**32-42**	**>42**		
Neck				3.026	.220
Yes	50	6	0		
No	59	11	3		
Total	109	17	3		
Shoulder				2.191	.901
No	88	15	3		
Right	11	1	0		
Left	4	1	0		
Both	6	0	0		
Total	109	17	3		
Elbow				1.117	.305
No	101	15	3		
Right	6	1	0		
Left	2	0	0		
Both	0	1	0		
Total	109	17	3		
Wrist				2.937	.817
No	101	15	3		
Right	6	1	0		
Left	2	0	0		
Both	0	1	0		
Total	109	17	3		
Upper Back				1.220	.543
Yes	30	4	0		
No	79	13	3		
Total	109	17	3		

Lower Back				.758	.685
Yes	59	8	1		
No	50	9	2		
Total	109	17	3		
Hips				1.766	.940
No	95	16	3		
Right	6	0	0		
Left	2	0	0		
Both	6	1	0		
Total	109	17	3		
Knees				3.593	.732
No	92	17	3		
Right	11	0	0		
Left	3	0	0		
Both	3	0	0		
Total	92	17	3		
Ankle				2.206	.900
No	98	17	3		
Right	4	0	0		
Left	3	0	0		
Both	4	0	0		
Total	109	17	3		

Table no.5: Association between age of the participant and ache, pain, discomfort in the body area during last 12 months

4.5.2: Association between BMI and currently have any pain in your body of the participant:

The table shows that the chi value was 5.914 and the P-value was .206. So, there is no significant association between BMI and currently have any pain in your body of the participant

BMI	**Currently have any pain in your body**			**Chi value**	**P value**
	Yes	**No**	**Total**		
Underweight	4	0	4	5.914	.206
Normal	53	28	81		
Overweight	28	9	37		
Obese	2	3	5		
Extremely obese	2	0	2		

Table no.6: Association between BMI and currently have any pain in your body of the participant

4.5.3: Association between Gender of the participant and ache, pain, discomfort in the body area during last 12 months:

The table shown that the association between gender of the participant and ache, pain, discomfort in the body area during last 12 months in neck, shoulder, elbow, wrist, upper back, lower back, hips, knees, ankle their Chi value and P value respectively .779 and .377, 5.253 and.154, .976 and .807, 5.560 and .135, 1.518 and .218, .089 and.765, 2.472 and .480, 3.197 and .362, 3.183 and .364

Ache, pain, discomfort in the body area during last 12 months	**Gender of the participant**		**Chi value**	**P value**
	Male	**Female**		
Neck			.779	.377
Yes	32	24		
No	36	37		
Total	68	61		
Shoulder			5.253	.154
No	51	55		
Right	9	3		
Left	4	1		
Both	4	2		
Total	68	61		
Elbow			.976	.807
No	62	57		
Right	4	3		
Left	1	1		
Both	1	0		
Total	68	61		
Wrist			5.560	.135
No	56	56		
Right	9	4		
Left	0	1		
Both	3	0		
Total	68	61		
Upper Back			1.518	.218
Yes	21	21		
No	47	48		
Total	68	61		
Lower Back			.089	.765
Yes	35	33		
No	33	28		

Total	68	61		
Hips			2.472	.480
No	58	56		
Right	4	2		
Left	2	0		
Both	4	3		
Total	68	61		
Knees			3.197	.362
No	58	54		
Right	6	5		
Left	1	2		
Both	3	0		
Total	68	61		
Ankle			3.183	.364
No	65	53		
Right	1	3		
Left	1	2		
Both	1	3		
Total	68	61		

Table no.7: Association between Gender of the participant and ache, pain, discomfort in the body area during last 12 months

CHAPTER- V DISCUSSION

The aim of the study was to identify work-related musculoskeletal disorders among physiotherapists in Dhaka city and Savar upazila. The researcher took 129 samples and tries to find out the work-related musculoskeletal disorder among physiotherapists.

At a study on Taslar et al., (2022), The prevalence of WMSDs was 63.9% in physiotherapists (lower back, shoulders, and neck were the most prevalent areas), compared to 46.5% in physiotherapy students (lower back, neck, and upper back) (p=0.031). The findings of the PF components showed that students had statistically considerably inferior flexibility than physiotherapists (approximately two thirds of students had poor or very bad outcomes of flexibility testing) (p=0.002). Only knee discomfort and inadequate cardiorespiratory endurance showed a statistically significant positive correlation between WMSDs and PF (OR=4.03 with 95% CI 1.12-14.58; p=0.033).

The researcher said that the findings showed that 149 (48%) of the PT responders had WMSDs. The most often injured body part and injury kind, respectively, were the lower back and muscular spasm. The most frequent activities linked to injuries were manual therapy methods and patient transfers (Alnaser & Aljadi, 2018).

The researcher said that the findings showed that over the previous 12 months, lower back (58%), neck (28%), and shoulder (15%) were the areas with the highest prevalence of MSD, followed by lower back (31%), elbow (2%), and wrist (5%) for the preceding 7 days. Comparing female participants to male participants, the probabilities of getting musculoskeletal diseases in the neck, shoulder, elbow, wrist/finger, and back are 1.31, 1.42, 1.23, 1.2, and 2.65, respectively. A strong correlation between low back pain and education level (back pain OR = 4.70), number of hours slept per day (back pain OR = 3.02), number of years working (wrist/finger pain OR = 3.05), and amount of physical activity (neck pain OR = 3.22), was also discovered (Farhaduzzaman & Hossain, 2014).

Both clinical and teaching physiotherapists reported that the neck region was more affected, with a clinical-62.4% prevalence. and 63.8% in teaching. More teaching physiotherapists than clinical physiotherapists were impacted. The rear region was then

impacted. Lower back pain impacted more people than upper back pain, with lower back pain prevalence at 61% and upper back - 51.8%.The predominance of knees was 29.1% in the area near to the back, and the sideways left knee was Right knee impacted 10.6% more than left knee (left knee affected 12.1%, both knees affected 6.4%) (Malarvizhi et al., 2017).

WMSD was 92.2% prevalent after one year. The neck (64%) and lower back (63) had the highest WMSD prevalence throughout a one-year period. For the shoulders and ankles/feet areas, WMSD was linked with older age and more years of practice. There were some physiotherapy patients who were at risk for neck and other body area problems. Different bodily parts' levels of physical activity were not associated with WMSD (Meh et al., 2020).

In Nigerian physiotherapists, the reported 12-month prevalence of WRMDs was 91.3%.Female physiotherapists and those with lower body mass indices had significantly greater prevalences of WRMDs ($p = 0.007$ and $p = 0.045$, respectively). The most often affected body area was the low back (69.8%), followed by the neck (34.1%). The majority of physiotherapists—50%—had their first WRMDs within five years of graduation, and those under 30 years old had the highest prevalence—61.7%. The majority of respondents (83.5%) identified treating a large number of patients in a single day as the most crucial work component for their WRMDs. The therapists changing their position and/or that of the patient was the most frequently used coping technique (64.3%). the majority of those surveyed (87.0%) (Adegoke et al., 2018).

Among the 414 respondents, WRMDs were reported by 82.6% within the previous two years, with the lower back being the most frequently impacted region (68.8%). A WRMD was reported by more than half of the PTs (54,8%) who said it happened in a private environment. Age (AOR = 0.78; 95% CI = 0.66, 0.91) and years of physiotherapy practice experience (AOR = 1.26; 95% CI = 1.07, 1.49) were significant predictors for WRMDs. Regarding the injury, 73.9% of the respondents said they didn't formally report it, and 55.8% of them said they missed a full day or more of work as a result (Khairy et al., 2019).

Men made up the majority of the respondents (n: 85, or 65.4%), and the average age and body mass index (BMI) for all respondents were 31.1 and 7.1 years, and 23.5 and 2.9 kg/m2, respectively. A study indicated that 3 out of 5 physiotherapists had LBP [n: 79 (60.8%); 95% percent confidence interval (CI): 52.4-69.2]. Physiotherapists' lack of maintaining proper posture, their preferred posture during practice, and the lack of

lumber support on chairs were all revealed to be substantially linked factors with LBP (Monda et al., 2018).

The physical therapists reported high levels of job control and moderate levels of job demands as compared to national averages. During follow-up, almost 16% of the therapists reported changing jobs. High job demands, poor job control, job stress, female sex, and younger age were risk factors for turnover. More over half of the therapists acknowledged experiencing pain at work. Low job control and job strain were risk factors for suffering from work-related pain (Campo et al., 2009).

Similar findings were found in the 40 semi-structured interviews with physical therapists and the focus group discussion with five participants. The main occupational risks associated with physiotherapy were thought to be musculoskeletal (e.g., awkward body postures during treatment, patient transfers, passive mobilization), psychosocial (e.g., statutory audit of prescriptions and the associated conflicts with doctors and health insurance providers), and partially dermal and infectious (e.g., wet work and infection risk). Infections, burnout syndrome, diseases of the wrist or finger joints, and the spine were all suggested as potential outcomes (Gibbig et al., 2017).

A questionnaire was filled up by 385 eligible participants. 99.5 percent of people had WMSDs. The five anatomical locations with the highest rates of injury were the lower back (69.1%), neck (65.7%), shoulder (47.7%), wrist/hand (39.1%), and upper back (37.0%). The most frequent risk factors identified by therapists for injuries are uncomfortable positions and moving heavy patients. In terms of coping mechanisms, PTs tended to change the posture of patients and therapists while working and solicit informal assistance from peers to alleviate injuries-related symptoms. With the exception of the upper back ($p > 0.05$), female therapists generally had a greater injury prevalence than male therapists. Education and working in several places at once (public and private clinics) significantly increased the risk of upper back injuries ($V = 0.14$, $p = 0$ There is a correlation between education and working in several places simultaneously (public and private clinics). notably to experiencing upper back injuries ($V = 0.14$, $p = 0.049$, and $V = 0.178$, $p = 0.002$, respectively), neck, respectively ($V = 0.16$, $p = .019$, and $V = 0.142$, $p = 0.020$). No correlation between WMSDs and therapists' experience or area of expertise ($p > 0.05$) (Taleb & Yousse, 2021).

38.5% of PT responders who used MT said they had experienced a WRMD that was related to their use of the technology. Injury rates related to MT were higher among

female respondents. Even if the risk of exposure increases over time, inexperienced practitioners also suffer harm (Cornwell et al., 2021).

According to the findings of this study, musculoskeletal issues affect 85.5% of physical therapists in Bangladesh. The most often affected areas (7.1%) were the neck (25.7%), lower back (15.2%), elbow (12.3%), ankle (8.6%), and shoulder (8.6%). Ailments of the hips (2.2%) and upper back (3.1%) had the lowest prevalence (Hossain et al., 2022).

In this study's among total 129 participant means and standard deviation of participant age where are Mean ± SD= 27.84 ±4.410.; here n= 109 (21-31) years were 84.5%, n= 17 (32-44) years 13.2% and n=3 (>42) years 2.3% of the participant. In this study n=68 (52.2%) participant were male and n=61 (47.3%) participant were female. In this study n=8 (6.2%) participant were living in rural, n=21 (16.3%) participant were living in semi urbanand n=100 (77.5%) participant were living in urban. In this study n= 101 (78%) were participant in Graduate and n=28 (22%) were participant in post-graduate. In this study participant were n=48 (37.2%) internship, n=7 (5.4%) were Both teaching and chamber, n=2 (1.6) were Teaching, n=12 (9.3) were both service and chamber, n=20 (15.5%) were Chamber practice, n=38 (29.5%) were Private service and n=2 (1.6%) were Government service. In this study n= 13 (10.1%) were government hospital, n=28 (21.7%) were Rehabilitation center, n=32 (24.8%) were Private hospital, n=1 (0.8%) were Special school, n=40 (31.0%) were private chamber and n= 15 (11.6%) were NGO. This study's participant means and standard deviation of participant income was Mean ±SD= 28589.55±.31511.438; here 0-40000 taka were n=104 (80.6%), 41000-81000 taka were n=14 (10.9%) and >81000 taka were n=11 (8.5%), of the participant. In this study n=4 (3.1%) were underweight, n=81 (62.4%) were normal, n=37 (62.8%) were overweight, n=5 (3.9%) were obese, n=2 (1.6%) were extremely obese.

In this study n=9 (7.0%) were consultant, n=21 (16.3%) were senior physiotherapist, n=47 (36.4%) were clinical physiotherapist, n=51 (39.5%) were Intern and n=1 (0.5%) were others. In this study n=66 (51.2%) were <1 year, n=34 (26.4%) were 1-5 years, n=20 (15.5%) were 6-10 years and n=9 (7.0%) were >10 years professional experience of the participant. In this study n=25 (19.4%) were <5 hours, n=68 (52.7%) were 6-8 hours, n=35 (27.1%) were 8-12 hours and n=1 (0.8%) were >10 hours duration of practice hours per day of the participant. In this study n=27 (20.9%) were <5 patients, n=62 (48.1%) were 5-10 patients, n=26 (20.2%) were 11-15 patients

and n=14 (10.9%) were >15 number of patients treated in a day of the participant. In this study n=2 (1.6%) were Patient with neurological disorders, n=42 (33.3%) were Patient with musculoskeletal disorders, n=11 (28.5%) were Patient with pediatric disorder and n=72 (56.6%) were General (all types) type of patients do treat usually of the participant.

In this study n=89 (69%) were pain and n=40 (31%) were no pain currently any pain in your body of the participant. In this study n=15 (11.6%) were 1 week, n=20 (15.5%) were 1 month, n=20 (15.5%) were 6 months, n=15 (11.6%) were1 1 year, n= 24 (18.6%) for as long as I can remember and n=35 (27.1%) were none pain experience of the participant. In this study n=37 (28.7%) were no pain (0), n=68 (52.7%) were mild (1-3), n=22 (17.1%) were moderate (4-6) and n=2 (1.6%) were severe pain by Grade of pain of the participant by NRS. In this study n=60 (46.5%) were yes, n=41 (31.8%) were no, n=28 (21.7%) were Unnecessary, I do not experience any pain for treatment procedure for your pain of the participant. In this study n=55 (43%) were yes, n=74 (57%) were no Pain affects your daily activities of the participant. In this study n=33 (25.6%) Excellent, n=25 (19.4%) were very good, n=48 (37.2%) were good, n=18 (14.0%) were fair and n=5 (3.9) were poor by health related quality of life health related quality of life.

In this study n=56 (43.4%) were neck, n=12 (9.3%) were right shoulder, n=5 (3.9%) were Left shoulder, n=6 (4.7%) were both shoulders, n=7 (5.4%) were Right wrist, n=2 (1.6%) wee left wrist, n=1 (0.8%) were both wrist, n=34 (26.40%) were upper back, n=64 (52.7%) were lower back, n=6 (4.7%) were right hip, n=2 (1.6%) were left hip, n=7 (5.4) were both hips, n=11 (8.5%) were right knee, n= 3 (2.3%) were right knee, n=3 (2.3%) were both knees, n=4 (3.1%) were right ankle, n=3 (2.3%) were left ankle and n=4 (3.1%) were both ankles. In this study n=36 (27.9%) were neck, n=14 (10.9%) were shoulder, n=12 (9.3%) were wrist, n=4 (3.1%) were elbow, n=18 (14.0%) were upper back, n=45 (34.9%) were lower back, n=5 (3.9%) were right hip, n=10 (7.8%) were knees, and n=10 (7.8%) were ankles of last 12 months been prevented from doing your normal work (at home or away from home) because of the trouble of the participant. In this study n=35 (27.1%) were neck, n=12 (9.3%) were shoulder, n=9 (7.0%) were elbow, n=4 (3.1%) were wrist, n=16 (12.4%) were upper back, n=44 (34.1%) were lower back, n=4 (3.1%) were right hip, n=10 (7.8%) were knees, and n=9 (7.0%) were ankles of last 7 days been prevented from doing your normal work (at home or away from home) because of the trouble of the participant.

In this study that the association between age of the participant and ache, pain, discomfort in the body area during last 12 months in neck, shoulder, elbow, wrist, upper back, lower back, hips, knees, ankle their Chi value and P value respectively 3.026 and .220, 2.191 and .901, 1.117 and .305, 2.937 and .817, 1.220 and .543, .758 and .685, 1.766 and .940, 3.593 and .732, 2.206 and .900. In this study that the chi value was .082 and the P-value was 8.284. So, there is no significant association between BMI and currently have any pain in your body of the participant. In this study that the association between gender of the participant and ache, pain, discomfort in the body area during last 12 months in neck, shoulder, elbow, wrist, upper back, lower back, hips, knees, ankle their Chi value and P value respectively .779 and .377, 5.253 and.154, .976 and .807, 5.560 and .135, 1.518 and .218, .089 and.765, 2.472 and .480, 3.197 and .362, 3.183 and .364

CHAPTER-VI CONCLUSION

Physical therapists from Dhaka city and the Savar upazila were the sample for the report, and a significant amount of them had experienced work-related physical injuries. The shoulders, low back, knees, and ankles were the body parts most prone to injury.

The aim of this study to assess the work-related musculoskeletal disorders among physiotherapists in Dhaka city and the Savar upazila. In order to determine whether participants had musculoskeletal issues, a questionnaire was administered to each participant. In this study's among total 129 participant ad researcher found that 69% of the participants suffered from musculoskeletal disorders. Among which the lower back was the most affected body part. In this case, the researcher find out the result that association between age of the participant and ache, pain, discomfort in the body area neck, shoulders, wrists, upper back, lower back, hips, knees and ankles during last 12 months were not significant and association between BMI and currently have any pain in your body of the participant were not significant. The researcher find out the result of this study association between gender of the participant and ache, pain, discomfort in the body area neck, shoulders, wrists, upper back, lower back, hips, knees and ankles during last 12 months were not significant. Although physical therapists have knowledge of and therapeutic experience in musculoskeletal injuries, these abilities do not provide protection from developing their own occupational musculoskeletal problems. In order to diminish work-related musculoskeletal disorders in the practice of physical therapy and to prevent potentially incapacitating problems, certain techniques should be created. The findings of this study suggest that strategies for managing patients manually and hand-intensive manual therapy techniques deserve special consideration.

CHAPTER-VII LIMITATIONS AND RECOMMENDATIONS

The following limitations should be considered for this study:

As I am student & I had to bear all the expenses from my own pocket, that's why I had faced fund limitations. As I am a student, so I could not go to the remote areas for collecting data. As I could not take calculated data for time limitations that's why this study might not show the actual view of the current scenario. Since it was a new topic for me and I had no experience about collecting data and had not any statistical expertise hence it might not show accurate result but few researchers from other countries had done some related research on this topic before that's why there was some evidence to support the outcome of this study. If this study could have some extra time to conduct this study, then it could be considered more valid & applicable.

RECOMMENDATIONS:

A recommendation evolves out of the context in which the study was conducted. The purpose of the study was to estimate the work-related musculoskeletal disorders among the physiotherapists in Dhaka city and the Savar upazila. Though the research has some limitations but researcher identified some further step that might be taken for the better accomplishment of further research. For the ensuring of the generalization of the research it is recommended to investigate large sample. In this study researcher only took the physiotherapist in Dhaka city and the Savar upazila. So for further study researcher strongly recommended to include physiotherapists from all over Bangladesh. In this study investigator only identified the work-related musculoskeletal disorders among the physiotherapist in 129 Dhaka city and the Savar upazila, so it is recommended for further study to identify the work-related musculoskeletal disorders among physiotherapists in Dhaka city and the Savar upazila. More study is needed in order to develop preventive approaches that include the wellbeing of physiotherapists in a field devoted to the improvement and restoration of health. Due to limitation of time investigator was not able to do pilot study. But pilot study is very much important for the validity of questionnaire. For this it is strongly recommended that if any further study will be done in this area then pilot study should be done to format the questionnaire. Beside this in this study the ratio of male and female participants were unequal. So it is recommended for further study to take the participants equally for comparison of gender and work related musculoskeletal disorders.

REFERENCES

A., Campo,M.A.,Weiser.S., Koenig.K.L.,(2009), American Physical Therapy Association, Job Strain in Physical Therapist, Volume 89

Abu-Taleb, W. and Rehan Youssef, A.,(2021). Work-related musculoskeletal disorders among Egyptian physical therapists. *Bulletin of Faculty of Physical Therapy*, *26*(1), pp.1-11.

Adegoke, B.O., Akodu, A.K. and Oyeyemi, A.L., 2008. Work-related musculoskeletal disorders among Nigerian physiotherapists. *BMC musculoskeletal disorders*, *9*(1), pp.1-9.

Al Eisa, E., Buragadda, S., Shaheen, A.M., Ibrahim, A. and Melam, G.R., (2012). Work related musculoskeletal disorders: causes prevalence and response among Egyptian and Saudi physical therapist. Middle East Journal Scientific research, 12(4):523–29.

Alnaser, M.Z. and Aljadi, S.H., (2019). Physical therapists with work-related musculoskeletal disorders in the State of Kuwait: A comparison across countries and health care professions. *Work*, *63*(2), pp.261-268.

Arnold, M., Radawiec, S., Campo, M. and Nordin, M., (2011). Changes in functional independence measure rating associated with safe pt. handling and movement program. Rehabilitation Nursing, 36(4):138–44.

B, B., Sauter S, S., Fine L, F., M, P., T, H., (2018). Job task and psychosocial risk factors for work-related musculoskeletal disorders employees, Scand J Work Environ Health; 20:417—26, doi:10.5271/sjweh.1379.

Bailey, D.M., (2006). Research for the health professional: a practical guide, second ed. F.A Davis Company, Philiphia. 24 (8)

Barai, G., (2007). Effect of Education Manual on Functional Rehabilitation of patient with complete paraplegia',Bangladesh Physiotherapist Journal .1(3)

Bowling, A., (2007), Research Method in Health: Investigating and Health Services, Open University Press, Buckingham.

Buddhadev, N.P. and Kotecha, I.S., (2012). Work related musculoskeletal disorders.A survey of physiotherapists in saurashtra region. National Journal Medical Research, 2(2):179.

Buddhadev, N.P. and Kotecha, I.S.,(2012). Work-related musculoskeletal disorders: a survey of physiotherapists in Saurashtra region. *National journal of medical research*, *2*(02), pp.179-181.

Campo, M., Weiser, S., Koenig, K.L. and Nordin, M., (2008).Work-related musculoskeletal disorders in physical therapists: a prospective cohort study with 1-year follow-up. Physical Therapy, 88(5):608-619.

Cornwell, L., Doyle, H., Stohner, M. and Hazle, C., (2021). Work-related musculoskeletal disorders in physical therapists attributable to manual therapy. *Journal of Manual & Manipulative Therapy*, *29*(2), pp.92-98.

Cromie, J.E., Robertson, V.J. and Best, M.O., (2004). Work-related musculoskeletal disorders in physical therapists: prevalence, severity, risks, and responses. Physical Therapy, 80(4):336-351.

Cromie, J.E., Robertson, V.J. and Best, M.O., (2007).Work related musculoskeletal disorders and the culture of physical therapy. Physical Therapy, 82(5):459-472.

Cromie, J.E., Robertson, V.J.,and Best, M.O., (2002). Occupational health in physiotherapy: general health and reproductive outcomes. Australian Journal of Physiotherapy, 48(4):287-94.

Da Costa, B.R. and Vieira, E.R., 2010. Risk factors for work-related musculoskeletal disorders: a systematic review of recent longitudinal studies. *American journal of industrial medicine*, *53*(3), pp.285-323.

Deepak, S., Ajeesh, P., (2012). Injury prevention in physiotherapists - a scientific review Work.;41:1855-1859 DOI: 10.3233/WOR-2012-0397-1855 IOS Press

Desai, R.G. and Shah, M.K., Prevention of Work-Related Musculoskeletal Disorders in Physiotherapist-A Review.

Ekstrom, R.A., Osborn, R.W. and Hauer, P.L., (2008). Surface electromyographic analysis of the low back muscles during rehabilitation exercises. Journal of Orthopedic and Sports Physical Therapy, 38 (12): 736- 745

Epstein S, Tran BN, Capone AC, Ruan QZ, Lee BT, Singhal D. Work-related musculoskeletal disorders among plastic surgeons: a systematic review. J Reconstruct Microsurg. 2018;34(08):553–62. https://doi.org/10.1055/s0037-1608680 PMID: 29166679.

Falavigna, A., Teles, A.R., Mazzocchin, T., Braga, G.L., Kleber, F.D. and Santin, G.T., (2011). Increased prevalence of LBP among physical therapy student compare to medical students. Euro spine Journal; 20(3):500–5.

Farhaduzzaman, S.M. and Hossain, Q.Z., PREVALENCE OF MUSCULOSKELETAL DISORDERS AMONG SELECTIVE HOSPITAL EMPLOYEES IN BANGLADESH.

Farhaduzzaman, S.M. and Hossain, Q.Z., The Association Between Musculoskeletal Disorders And Work-Related Risk Factors In Hospital Employees Of Bangladesh.

Girbig,M., Freiberg,A , Deckert,S. , Druschke,D., Kopkow.C. , Nienhaus,A. and Seidler,A., (2017). Journal of Occupational Medicine and Toxicolog, Work-related exposures and disorders among physical therapists: experiences and beliefs of professional representatives assessed using a qualitative approach, DOI 10.1186/s12995-016-0147-0

Haleem, M.H., Ali, I., Khan, S., Jehangir, A. and Ullah, I., (2020). Work related musculoskeletal disorders in physical therapists; a systematic review. *Rehman Journal of Health Sciences, 2*(2), pp.28-35.

Hayes, M.J., Cockrell, D. and Smith, D.R.,(2009).A systematic review of musculoskeletal disorders among dental professionals', International Journal of DentalHygiene, 7:159–165.

Healthy Back Exercises: Strengthen and Stretch, (2011), spineuniverse, avialble:http://www.spineuniverse.com/wellness/exercise/healthybackexercises-strengthen-stretch[viewed 1 may 2023].

Hossain, A., Proma, T.S., Raju, R., Ahmed, S. and Islam, A., 2022. Employment-related musculoskeletal complications experienced by the physical therapists in Bangladesh: a comprehensive cross-sectional case study. *Bulletin of Faculty of Physical Therapy, 27*(1), pp.1-7.

Hossain,A., Proma, T.S., Raju.R., Ahmed,S., and Islam,S., (2022). Employment-related musculoskeletal complications experienced by the physical therapists in Bangladesh: a comprehensive cross-sectional case study, Bulletin of Faculty of Physical Therapy, 27:36; https://doi.org/10.1186/s43161-022-00096-6.

Islam A, Ahmed S, Kamrujjaman M, Akhter S. Efect of physical exercise and routine intervals on LBP assessment using VAS, OLBPDQ, and RMQ among professional motorbike riders in Dhaka city. J Phys Educ Sport. 2020;20(4):1747–53.

Karanikas, N. and Jani, B.D., (2022). Frequency of examination and perceived contribution of factors relating to work-related musculoskeletal disorders of physiotherapists. *International Journal of Occupational Safety and Ergonomics*, *28*(2), pp.1112-1129.

Kasaw Kibret, A., Fisseha Gebremeskel, B., Embaye Gezae, K. and Solomon Tsegay, G., (2020). Work-related musculoskeletal disorders and associated factors among bankers in Ethiopia, 2018. *Pain Research and Management*, *2020*.

Khairy, W.A., Bekhet, A.H., Sayed, B., Elmetwally, S.E., Elsayed, A.M. and Jahan, A.M., (2019). Prevalence, Profile, And Response to Work-Related Musculoskeletal Disorders Among Egyptian Physiotherapists. Open Access Maced J Med Sci.

Maire, M., and Ross-Motta, J., (2009). Work-related Musculoskeletal Disorders, Ecology research group, University of Oregon

Marina,H., Gregor, S., Andreja,K., (2022). Work-related musculoskeletal disorders among physiotherapists and physiotherapy students in Croatia and their association with physical fitness. Zdr Varst. 2022;61(3):171-180. doi: 10.2478/sjph-2022-0023.

Mead, J., (2003). 'The responsibilities of being PT' in SB porter ed, Tide's PT, Butter Hainemann, New Delhi. 21-22.

Meh, J., Bizovičar, N., Kos, N. and Jakovljević, M., (2020). Work-related musculoskeletal disorders among Slovenian physiotherapists. *Journal of Health Sciences*, *10*(2), pp.115-124.

Minetto, M.A., Giannini, A., McConnell, R., Busso, C., Torre, G. and Massazza, G., (2020). Common musculoskeletal disorders in the elderly: the star triad. *Journal of clinical medicine*, *9*(4), p.1216.

Minetto, M.A., Giannini, A., McConnell, R., Busso, C., Torre, G. and Massazza, G., (2020). Common musculoskeletal disorders in the elderly: the star triad. *Journal of clinical medicine*, *9*(4), p.1216.

Mirmohammadi, S. Yazdanib, J., Etemadinejadc, S., Asgarinejad, H., (2015). A cross-sectional study on work-related musculoskeletal disorders and associated risk factors among hospital health cares, 6th International Conference on Applied Human Factors and Ergonomics, Vol.3; p.p. 4528 – 4534. doi: 10.1016/j.promfg.2015.07.468

Mondal, R., Sarker, R.C., Akter, S., Banik, P.C. and Baroi, S.K., 2018. Prevalence of low back pain and its associated factors among physiotherapists in Dhaka city of Bangladesh in (2016). *Journal of Occupational Health and Epidemiology*, *7*(2), pp.70-74.

Nourdin, N.A. and leonard, J.H., (2011).The work related injuries among public hospitals – a South East Asian Picture. Clinic Sao Paulo; 66(3):373–78.

Peter, V., (2006). Musculoskeletal Disorders: What are the causes and controls in construction? Construction safety magazine & Musculoskeletal Disorders.11 (3).

Rahman, Z.A. and Atiya, A.S.,(2009). Prevalence of work-related upper limbs symptoms (WRULS) among office workers. Asia Pac. Journal of Public Health, 21: 252-258. DOI: 10.1177/1010539509341423

Ramanandi, V.H. and Desai, A.R., (2021). Association of working hours, job position, and BMI with work-related musculoskeletal disorders among the physiotherapists of Gujarat—an observational study. *Bulletin of Faculty of Physical Therapy*, *26*(1), pp.1-6.

Ramanndi, V. and Desai, A., (2021). Prevalence and Risk Factors of work-related Musculoskeletal Disorders among Indian Physiotherapists: A Narrative Review of Literature. *Archives of Occupational Health*, *5*(2), pp.961-968.

Rashaduzzaman M, Kamrujjaman M, Islam MA, Ahmed S, Al Azad S. An experimental analysis of diferent point specifc musculoskeletal pain among selected adolescent-club cricketers in Dhaka city. doi: 10.15584/ ejcem.2019.4.4.

Ritchie, (2007). Physiotherapists at work. RM30, 2008. http://www.bcphsio.org

Rozenfeld, V., Ribak, J., Danziger, J., Tsamir, J. andCarmeli, E.,(2010). Prevalence, risk factors and preventative strategies in work-related musculoskeletal

disorders among Israeli physical therapists. Physiotherapy Research International, 15 (3): 176-184

Rundell S.D., Davenport T.E. and Wagner, T.,(2009). Physical therapist management of acute and chronic low back pain using the World Health Organization's international classification of functioning, disability and health. Physical Therapy, 89 (1): 82-90.

Samat, A.R., Shafei, M.N., Yaacob, N.A. and Yusoff, A.,(2011). 'Prevalence and Associated Factors of Back Pain among Dental Personnel in North Eastern State of Malaysia',International Journal of Collaborative Research onInternal Medicine & Public Health,vol. 3(7).

Skotte, J.H., Essendrop, M., Hansen, A.F. andSchibye, B. A., (2009). Dynamic 3D biomechanical evaluation of the load on the low back during different patient-handling tasks.Journalof Biomechanics. 35:1357–1366.

Smith, D.R. and Leggat, P.A., (2007). Musculoskeletal disorders in nursing. Australian Nursing Journal, 11:1-4

Smith, E., Hoy, D.G., Cross, M., Vos, T., Naghavi, M., Buchbinder, R., Woolf, A.D. and March, L., (2014). The global burden of other musculoskeletal disorders: estimates from the Global Burden of Disease 2010 study. *Annals of the rheumatic diseases*, *73*(8), pp.1462-1469.

Sommerich, C.M., McGlothin, J.D. andMarras W.S., (2006). Occupational risk factors associated with soft tissue disorders and low back pain, a review of recent investigations in the literature, http://www.cdc.gov/niosh/docs/97- 141/default.html.

Stanton, T.R., Fritz, J.M., Hancock, M.J., Latimer, J., Maher, C.G., Wand, B.M., Parent, E.C., (2011). Physical Therapy.91 (4):496-509. doi: 10.2522/ptj.20100272. Epub 2011 Feb 17.

Tanya, C., Julie, F.P., Alan,T., SallY,C., Paul, E. and Philip G. C.(2008).Variability in depression prevalence in early rheumatoid arthritis. BioMed Central Musculoskeletal Disorders, 10:18 doi: 10.1186/1471-2474- 10-18

Tegenu, H., Gebrehiwot, M., Azanaw, J. and Akalu, T.Y., (2021). Self-reported work-related musculoskeletal disorders and associated factors among restaurant

workers in Gondar city, Northwest Ethiopia, (2020). *Journal of Environmental and Public Health, 2021*.

Tislar, M.H., Starc, G. and Kukec, A., (2022). Work-related musculoskeletal disorders among physiotherapists and physiotherapy students in Croatia and their association with physical fitness. *Slovenian Journal of Public Health*, *61*(3), pp.171-180.

West, D.J. and Gardner , D., (2005). Occupational injuries of physiotherapists in North and Central Queensland. Australian Journal of Physiotherapy, 47: 179- 186.

APPENDIX – I

Consent form

Respondent ID no: | | | |

Dear participant.

I am Wasiur Rahman student of B.sc in physiotherapy program in the Department of Physiotherapy at SAIC College of Medical Science and Technology affiliated by University of Dhaka conducting the study entitled **Work-related musculoskeletal disorder among physiotherapist: A cross-sectional study** as a part my thesis work for the partial fulfillment of Bachelor degree. There is a list of question you need to fill up which include Demographic, professional practice, musculoskeletal pain and Nordic musculoskeletal question. For spending your time to participate in this self-administered interview which will take around 10-15 minutes. There is list of questionnaires and you need to fill up each answer. The information gained from this questionnaire will be used for academic purpose and will be kept confidential. Your participation in this study is totally voluntarily and you have the right to withdraw from the interview without any clarification at any moment. You can ask any question to the researcher regarding the study to meet up your quarry. Looking forward your kind cooperation.

Declaration of the participant

I have been answered in this survey. The foregoing information has been read to me and that have been answered to my satisfaction. I have noticed that my participation in this study is totally voluntary and I have the right to withdraw from the interview at any clarification. I give my consent voluntarily to be participants in this study.

Respondent name:

…….

Signature and date: ……

APPENDIX – II

সম্মতিপত্র

উত্তর দাতার আইডি নাম্বার

প্রিয় অংশগ্রহনকারী

আমি ওয়াসিউর রহমান সাইক কলেজ অব মেডিকেল সায়েন্স এন্ড টেকনোলজি এর বি এস সি ইন ফিজিওথেরাপী বিভাগের একজন ছাত্র। আমার বি এস সি ইন ফিজিওথেরাপী ডিগ্রি সম্পন্ন করতে গবেষণার অংশ হিসেবে ফিজিওথেরাপিস্টের মধ্যে কাজ-সম্পর্কিত মাংশ পেশী অস্থির ব্যাধি ব্যাধিঃ একটি ক্রস-বিভাগীয় গবেষণাশিরোনামে একটি গবেষণার কাজ করছি। এখানে আপনার জনসংখ্যাগত, পেশাদার অনুশীলন, পেশীবহুল ব্যথা এবং নর্ডিক পেশীবহুল প্রশ্ন দেয়া আছে যা আপনাক পুরন করতে হবে। আপনার নিজের দ্বারা দেয়া এই সাক্ষাতকার দিতে ১৫-২০ মিনিট সময় লাগবে। এখানে প্রশ্নাবলীর একটা তালিকা দেয়া আছে এবং আপনাকে প্রত্যেকটি প্রশ্নের উত্তর দিতে হবে ।এই গবেষণায় প্রাপ্ত তথ্য শুধু মাত্র শিক্ষা ক্ষেত্রে ব্যবহার করা হবে এবং অংশগ্রহণকারীর ব্যক্তিগত তথ্য সম্পূর্ণ গোপনীয়তার মধ্যে থাকবে, অন্য কোথাও প্রকাশ করা হবে না। গবেষণা চলাকালীন সময়ে অংশগ্রহনকারী কোনরকম দ্বিধা বা ঝুকি ছাড়াই যেকোনো সময় এটাকে বাদ দিতে পারবেন। আপনার একান্ত সহযোগীতা কামনা করছি।

অংশগ্রহনকারীর ঘোষনা

আমাকে এই গবেষণার জন্য আমন্ত্রন জানানো হয়েছে এবং সম্পূর্ণ প্রশ্ন গুলো পড়ে বুঝানো হয়েছে এবং আমি কোন ধরনের দ্বিধা ছাড়াই উত্তর দিয়েছি। আমি লক্ষ্য করেছি এই গবেষণায় আমার অংশগ্রহন সম্পূর্ণ স্বেচছায় এবং কোন রকম ঝুকি ছাড়াই আমি যেকোনো সময় এটাকে বাদ দিতে পারব। আমি এই গবেষণায় অংশগ্রহণে সম্পূর্ণ সম্মতি জ্ঞাপন করছি।

অংশগ্রহনকারীর নামঃ

……

স্বাক্ষর তারিখঃ ……

APPENDIX – III

Work-related musculoskeletal disorder among physiotherapists: A cross-sectional study

Date:

Code no: | | | |

Participant name: .....

Address: .....

Mobile No.:.....

E-mail ID:……

Section: A. Demographic Data

Q. N.	Question	Response	Ans.
1	Age of the participant (years)		
2	Gender	1. Male	
		2. Female	
3	Where do you live in?	1. Urban	
		2. Semi urban	
		3. Rural	
4	Educational qualification	1. Graduate	
		2. Post-graduate	
		3. Doctorate	
5	What kind of job are you doing?	1. Government service	
		2. Private Service	

		3. Chamber practice	
		4. Both service and chamber	
		5. Teaching	
		6. Both teaching and chamber	
		7.Internship	
6	Work setting	1.Government hospital	
		2. Rehabilitation center	
		3. Private hospital	
		4. Special school	
		5. Private chamber	
		6. NGO	
7	Gross monthly income		
8	Weight in Kg		
9	Height in Inch		

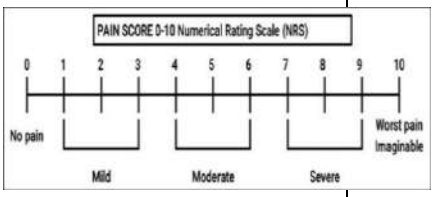
Section B. Questions regarding professional practice

10	What is your designation?	1.Consultant	
		2. Senior Physiotherapist	
		3. Clinical physiotherapist	
		4. Intern	
		5. Others	
11	Your professional experience	1. < 1 year	

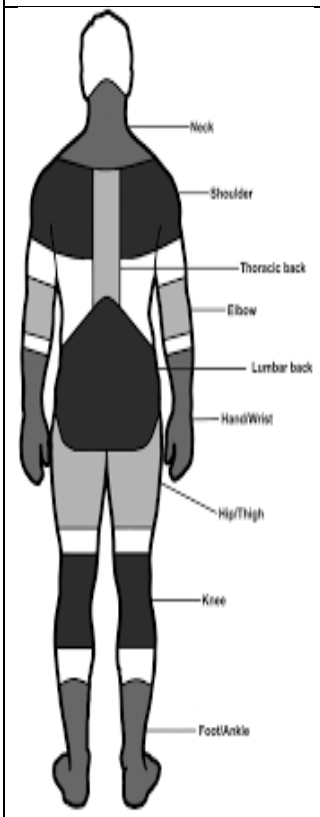
		2. 1-5 years	
		3. 6-10 years	
		4. >10 years	
12	Duration of practice hours per day	1. < 5 hours	
		2. 6-8 hours	
		3. 8-12 hours	
		4. >12 hours	
13	Number of patients treated in a day	1. <5	
		2. 5-10	
		3. 11-15	
		4. >15	
14	What type of patients do you treat usually?	1. Patient with neurological disorders	
		2. Patient with musculoskeletal disorders	
		3. Patient with pediatric disorder	
		4. Patient with sports injuries	
		5. Cardiac rehabilitation	
		6. General (all types)	

Section C. Question regarding musculoskeletal pain

15	Do you currently have any pain in your body?	1. Yes	
		2. No	
16	How long have you been experiencing pain?	1. 1 week	
		2. 1 month	

		3. 6 months	
		4. 1 year	
		5. For as long as I can remember	
		6. None	
17	How would you grade your pain from a scale of 0 to 10 (0 indicating no pain 10 worst pain)	1. No pain (0) 2. Mild (1-3) 3. Moderate (4-6) 4. Severe (7-9) 5. Worst pain (10) 	
18	Did you undergo any treatment procedure for your pain?	1. Yes	
		2. No	
		3. Unnecessary, I do not experience any pain	
19	Does your pain affects your daily activities?	1. Yes	
		2. No	
20	In general, would you say your health related quality of life is	1. Excellent	
		2. Very good	
		3. Good	
		4. Fair	
		5. Poor	

Section: D Nordic Musculoskeletal Question



Trouble with the locomotive organs

Have you at any time during the last 12 months had trouble (ache, pain, discomfort) in:			To be answered only by those who have had trouble			
			Have you at any time during the last 12 months been prevented from doing your normal work (at home or away from home) because of the trouble?		Have you had any trouble at any time during the last 7 days?	
Neck	1.Yes		1.Yes		1.Yes	
	2.No		2.No		2. No	
Shoulders	1.No		1.Yes		1.Yes	
	2.Right					
	3.Left		2.No		2. No	
	4.Both					
Elbows	1.No		1.Yes		1.Yes	
	2.Right					
	3.Left		2.No		2. No	
	4.Both					
Wrist/hands	1.No		1.Yes		1.Yes	
	2.Right					
	3.Left		2.No		2. No	
	4.Both					

	Upper back	1.Yes		1.Yes		1.Yes	
		2.No		2.No		2. No	
	Lower back	1.Yes		1.Yes		1.Yes	
		2.No		2.No		2.No	
	Hips/thighs	1.No		1.Yes		1.Yes	
		2.Right					
		3.Left		2.No		2.No	
		4.Both					
	Knees	1.No		1.Yes		1.Yes	
		2.Right					
		3.Left		2.No		2.No	
		4.Both					
	Ankles/feet	1.No		1.Yes		1.Yes	
		2.Right					
		3.Left		2.No		2.No	
		4.Both					

APPENDIX – IV

ফিজিওথেরাপিস্টদের মধ্যে কাজ-সম্পর্কিত পেশীবহুল ব্যাধি: একটি ক্রস-বিভাগীয় গবেষণা

তারিখ:

কোড নং: | | | |

অংশগ্রহণকারীর নাম:.....

ঠিকানা: .....

মোবাইল নাম্বার.:.....

ইমেইলআইডি:……
…

বিভাগ: এ. ডেমোগ্রাফিক ডেটা

প্রশ্ন নং	প্রশ্ন	প্রতিক্রিয়া	উ
১	অংশগ্রহণকারীর বয়স (বছর)		
২	লিঙ্গ	1. পুরুষ	
		2. মহিলা	
৩	আপনি কোথায় থাকেন?	1. শহুরে	
		2. আধা শহুরে	
		3. গ্রামীণ	
৪	শিক্ষাগত যোগ্যতা	1. স্নাতক	
		2. স্নাতকোত্তর	
		3. ডক্টরেট	
৫	আপনি কি ধরনের কাজ করছেন?	1. সরকারি চাকরি	

		2. ব্যক্তিগত পরিষেবা	
		3. চেম্বার অনুশীলন	
		৬4. উভয় পরিষেবা এবং চেম্বার	
6	কাজ সেটিং	1. সরকারি হাসপাতাল	
		2. পুনর্বাসন কেন্দ্র	
		3. বেসরকারি হাসপাতাল	
		বিশেষ বিদ্যালয়	
		5. ব্যক্তিগত চেম্বার	
		6. এনজিও	
৭	স্থূল মাসিক আয়		
৮	কেজিতে ওজন		
৯	ইঞ্চিতে উচ্চতা		

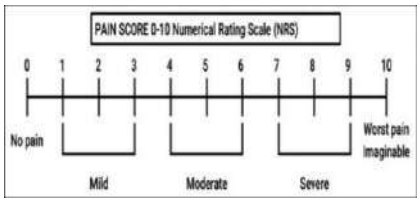
বিভাগ **বি.** পেশাদার অনুশীলন সম্পর্কিত প্রশ্ন

১০	আপনার পদবী কি?	1. পরামর্শদাতা	
		2. সিনিয়র ফিজিওথেরাপিস্ট	
		3. ক্লিনিক্যাল ফিজিওথেরাপিস্ট	
		4. ইন্টার্ন	
		5. অন্যান্য	
১১	আপনার পেশাদার অভিজ্ঞতা	1. <1 বছর 4. >10 বছর	
		2. 1-5 বছর	
		3. 6-10 বছর	
		4. >10 বছর	
১২	প্রতিদিন অনুশীলনের সময়কাল	1. <5 ঘন্টা	
		2. 6-8 ঘন্টা	

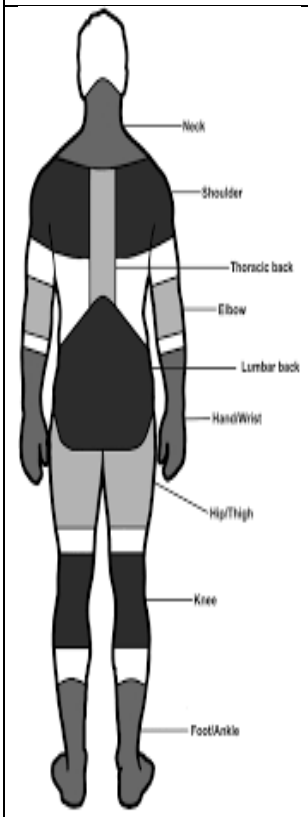
		3. 8-12 ঘন্টা	
		4. >12 ঘন্টা	
১৩	এক দিনে চিকিৎসা করা রোগীর সংখ্যা	1. <5	
		2. 5-10	
		3. 11-15	
		4. >15	
১৪	আপনি সাধারণত কি ধরনের রোগীদের চিকিত্সা করেন?	1. স্নায়বিক রোগের রোগী	
		2. পেশীবহুল ব্যাধি সহ রোগী	
		3. শিশু রোগে আক্রান্ত রোগী	
		4. ক্রীড়া আঘাত সহ রোগী	
		5. কার্ডিয়াক পুনর্বাসন	
		6. সাধারণ (সব ধরনের)	

বিভাগ সি. পেশীবহুল ব্যথা সম্পর্কিত প্রশ্ন

১৫	আপনার কি বর্তমানে আপনার শরীরে কোন ব্যথা আছে?	1. হ্যাঁ	
		2. না	
১৬	আপনি কতদিন ধরে ব্যথা অনুভব করছেন?	1. 1 সপ্তাহ	
		2. 1 মাস	
		3. 6 মাস	
		4. 1 বছর	
		5. যতক্ষণ আমি মনে করতে পারি	
		6. কোনোটিই নয়	
১৭	আপনি কীভাবে আপনার ব্যথাকে 0 থেকে 10 এর স্কেল থেকে গ্রেড করবেন (0 ব্যথা নেই 10 সবচেয়ে খারাপ ব্যথা নির্দেশ করে)	1. ব্যথা নেই (0) 2. হালকা (1-3) 3. মধ্যপন্থী (4-6) 4. গুরুতর (7-9) 5. সবচেয়ে খারাপ ব্যথা (10)	

			
১৮	আপনি কি কোন চিকিৎসা পদ্ধতির মধ্য দিয়েছিলেন?	1. হ্যাঁ 2. না 3. অপ্রয়োজনীয়, আমি কোন ব্যথা অনুভব করি না	
১৯	আপনার ব্যথা কি আপনার দৈনন্দিন কার্যকলাপ প্রভাবিত করে?	1. হ্যাঁ 2. না	
২০	সাধারণভাবে, আপনি কি আপনার স্বাস্থ্য সম্পর্কিত জীবনযাত্রার মান বলতে চান	1. চমৎকার 2. খুব ভাল 3. ভাল 4. ন্যায্য 5. দরিদ্র	

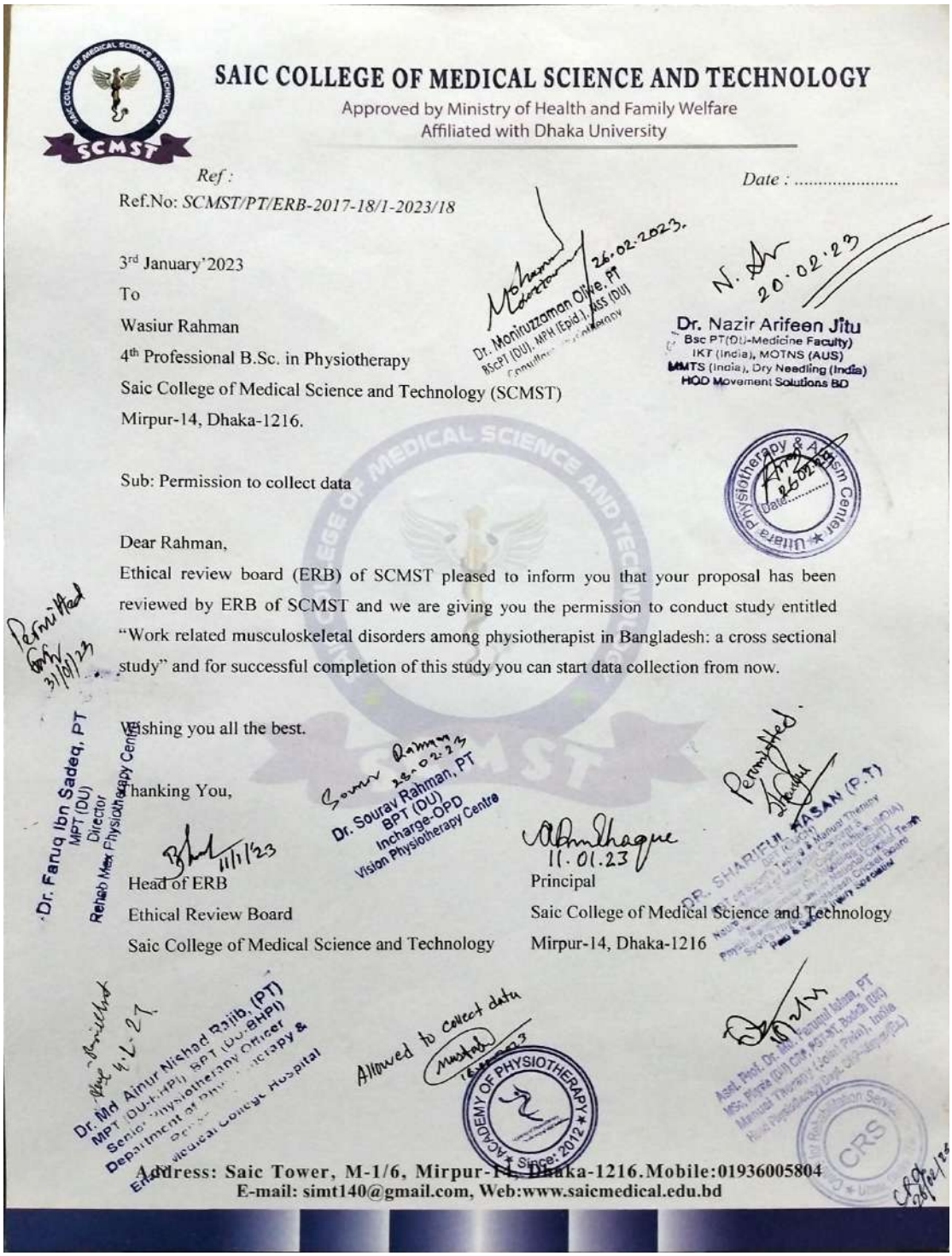
বিভাগ: ডি নর্ডিক মাস্কুলোস্কেলিটাল প্রশ্ন



লোকোমোটিভ অঙ্গগুলির সাথে সমস্যা						
গত 12 মাসে আপনার কি কোন সময়ে সমস্যা (ব্যথা, ব্যথা, অস্বস্তি) হয়েছে:			যারা সমস্যায় পড়েছেন তাদেরই উত্তর দিতে হবে			
			গত 12 মাসের মধ্যে কোন সময় সমস্যাটির কারণে আপনার স্বাভাবিক কাজ (বাড়িতে বা বাড়ির বাইরে) করতে বাধা দেওয়া হয়েছে?		আপনি কি গত 7 দিনের মধ্যে কোন সময়ে কোন সমস্যা হয়েছে?	
ঘাড়	1. হ্যাঁ 2. না		1. হ্যাঁ 2. না		1. হ্যাঁ 2. না	
কাঁধ	**1.**না **2.**ঠিক **3** বাম **4.**উভয়		1. হ্যাঁ 1. হ্যাঁ		1. হ্যাঁ 1. হ্যাঁ	
কনুই	**1.**না **2.**ঠিক বাম **4.**উভয়		1. হ্যাঁ 1. হ্যাঁ		1. হ্যাঁ 1. হ্যাঁ	
কব্জি/হাত **1.**না **2.**ঠিক	1.না 2.ঠিক **3** বাম **4.**উভয়		1. হ্যাঁ 1. হ্যাঁ		1. হ্যাঁ 1. হ্যাঁ	
উপরের দিকে পিছনে	1. হ্যাঁ 2. না		1. হ্যাঁ 2. না		1. হ্যাঁ 2. না	

	পিঠের নিচের দিকে	1. হ্যাঁ 2. না		1. হ্যাঁ 2. না		1. হ্যাঁ 2. না	
	পোঁদ/উরু	**1.**না **2.**ঠিক **3** বাম **4.**উভয়		1. হ্যাঁ 1. হ্যাঁ		1. হ্যাঁ 1. হ্যাঁ	
	হাঁটু	1.না 2.ঠিক 3 বাম 4.উভয়		1. হ্যাঁ 1. হ্যাঁ		1. হ্যাঁ 1. হ্যাঁ	
	গোড়ালি/পা	**1.**না **2.**ঠিক **3** বাম **4.**উভয়		1. হ্যাঁ 1. হ্যাঁ		1. হ্যাঁ 1. হ্যাঁ	

APPENDIX – V



SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY
Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref : *Date :* .....

Ref.No: *SCMST/PT/ERB-2017-18/1-2023/18*

3rd January'2023

To

Wasiur Rahman
4th Professional B.Sc. in Physiotherapy
Saic College of Medical Science and Technology (SCMST)
Mirpur-14, Dhaka-1216.

Sub: Permission to collect data

Dear Rahman,

Ethical review board (ERB) of SCMST pleased to inform you that your proposal has been reviewed by ERB of SCMST and we are giving you the permission to conduct study entitled "Work related musculoskeletal disorders among physiotherapist in Bangladesh: a cross sectional study" and for successful completion of this study you can start data collection from now.

Wishing you all the best.

Thanking You,

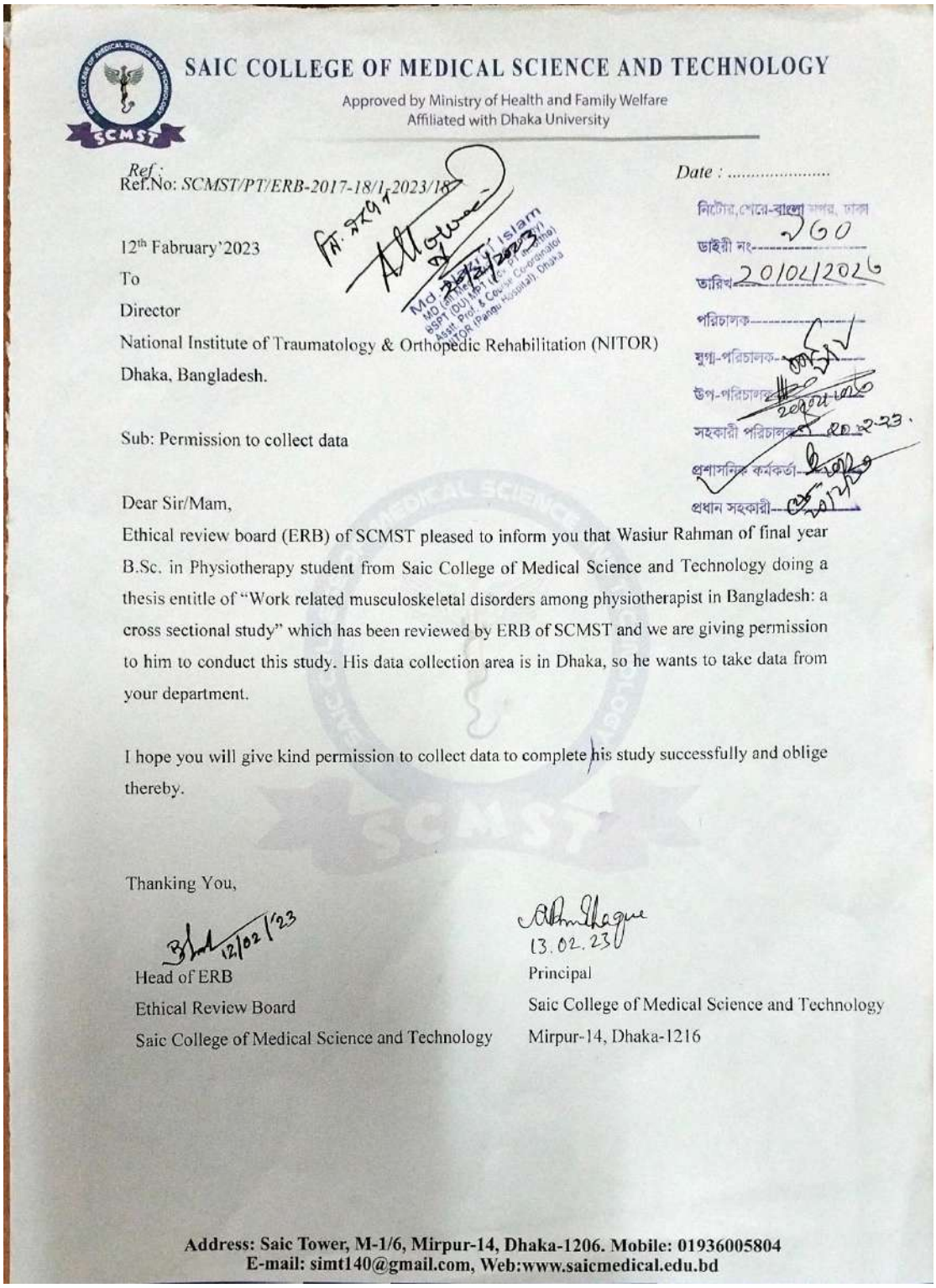
Head of ERB
Ethical Review Board
Saic College of Medical Science and Technology

Principal
Saic College of Medical Science and Technology
Mirpur-14, Dhaka-1216

Dr. Moniruzzaman Olwe, PT
Dr. Nazir Arifeen Jitu
Dr. Souray Rahman, PT
Dr. Faruq Ibn Sadeq, PT
Dr. Md Ainur Nishad Rajib, (PT)
Allowed to collect data
ACADEMY OF PHYSIOTHERAPY

Address: Saic Tower, M-1/6, Mirpur-14, Dhaka-1216. Mobile:01936005804
E-mail: simt140@gmail.com, Web:www.saicmedical.edu.bd

APPENDIX – VI



SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY

Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref :
Ref.No: SCMST/PT/ERB-2017-18/1-2023/18

Date : .....

নিটোর,শেরে-বাংলা নগর, ঢাকা
ডাইরী নং- ৬০
তারিখ 20/02/2026
পরিচালক
যুগ্ম-পরিচালক
উপ-পরিচালক
সহকারী পরিচালক
প্রশাসনিক কর্মকর্তা
প্রধান সহকারী

12th Fabruary'2023

To

Director

National Institute of Traumatology & Orthopedic Rehabilitation (NITOR)

Dhaka, Bangladesh.

Sub: Permission to collect data

Dear Sir/Mam,

Ethical review board (ERB) of SCMST pleased to inform you that Wasiur Rahman of final year B.Sc. in Physiotherapy student from Saic College of Medical Science and Technology doing a thesis entitle of "Work related musculoskeletal disorders among physiotherapist in Bangladesh: a cross sectional study" which has been reviewed by ERB of SCMST and we are giving permission to him to conduct this study. His data collection area is in Dhaka, so he wants to take data from your department.

I hope you will give kind permission to collect data to complete his study successfully and oblige thereby.

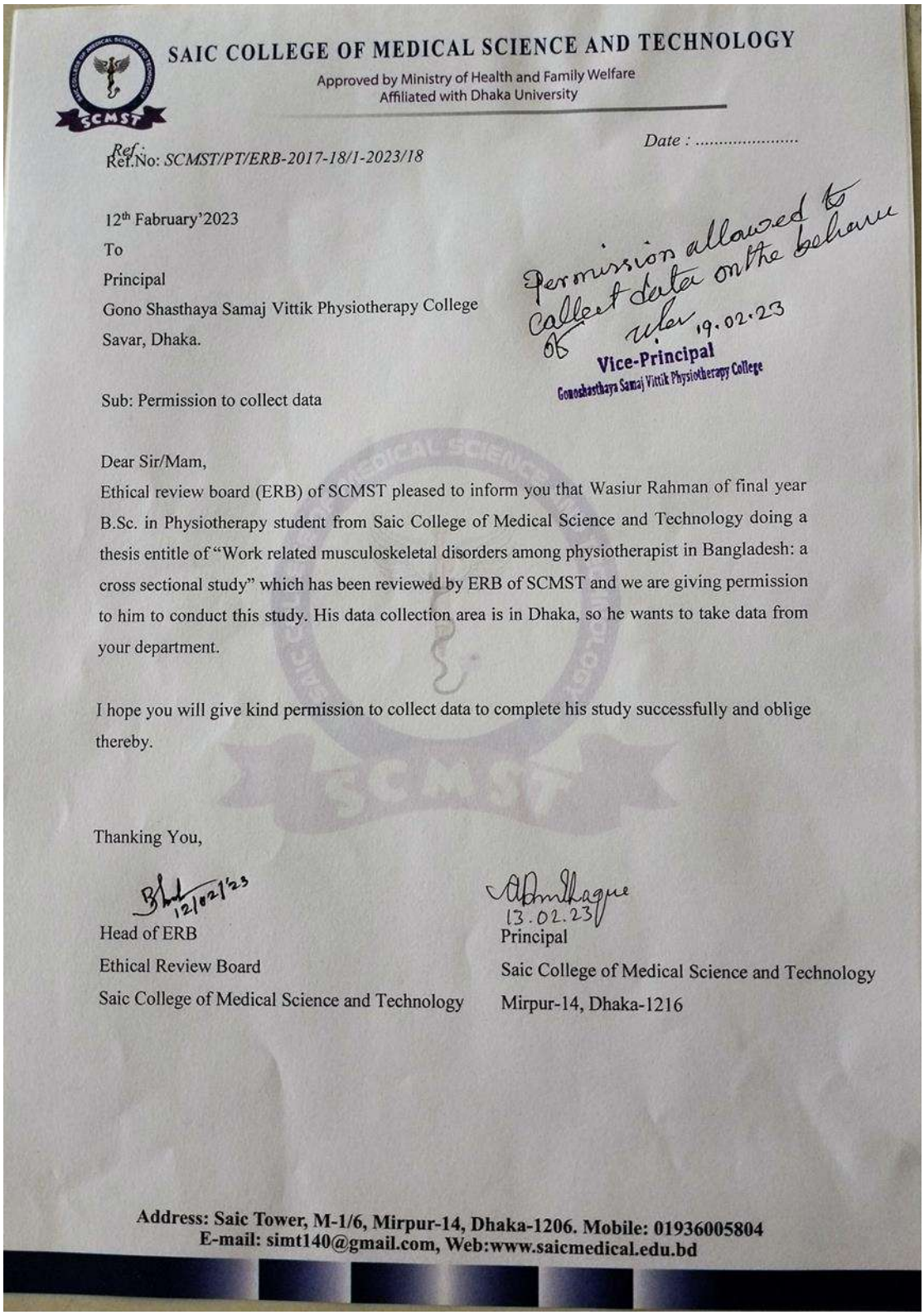
Thanking You,

12/02/'23
Head of ERB
Ethical Review Board
Saic College of Medical Science and Technology

13.02.23
Principal
Saic College of Medical Science and Technology
Mirpur-14, Dhaka-1216

Address: Saic Tower, M-1/6, Mirpur-14, Dhaka-1206. Mobile: 01936005804
E-mail: simt140@gmail.com, Web:www.saicmedical.edu.bd

APPENDIX – VII



SAIC COLLEGE OF MEDICAL SCIENCE AND TECHNOLOGY

Approved by Ministry of Health and Family Welfare
Affiliated with Dhaka University

Ref.No: *SCMST/PT/ERB-2017-18/1-2023/18*

Date : .....

12th Fabruary'2023

To

Principal

Gono Shasthaya Samaj Vittik Physiotherapy College

Savar, Dhaka.

Permission allowed to collect data on the behave
19.02.23
Vice-Principal
Gonoshasthaya Samaj Vittik Physiotherapy College

Sub: Permission to collect data

Dear Sir/Mam,

Ethical review board (ERB) of SCMST pleased to inform you that Wasiur Rahman of final year B.Sc. in Physiotherapy student from Saic College of Medical Science and Technology doing a thesis entitle of "Work related musculoskeletal disorders among physiotherapist in Bangladesh: a cross sectional study" which has been reviewed by ERB of SCMST and we are giving permission to him to conduct this study. His data collection area is in Dhaka, so he wants to take data from your department.

I hope you will give kind permission to collect data to complete his study successfully and oblige thereby.

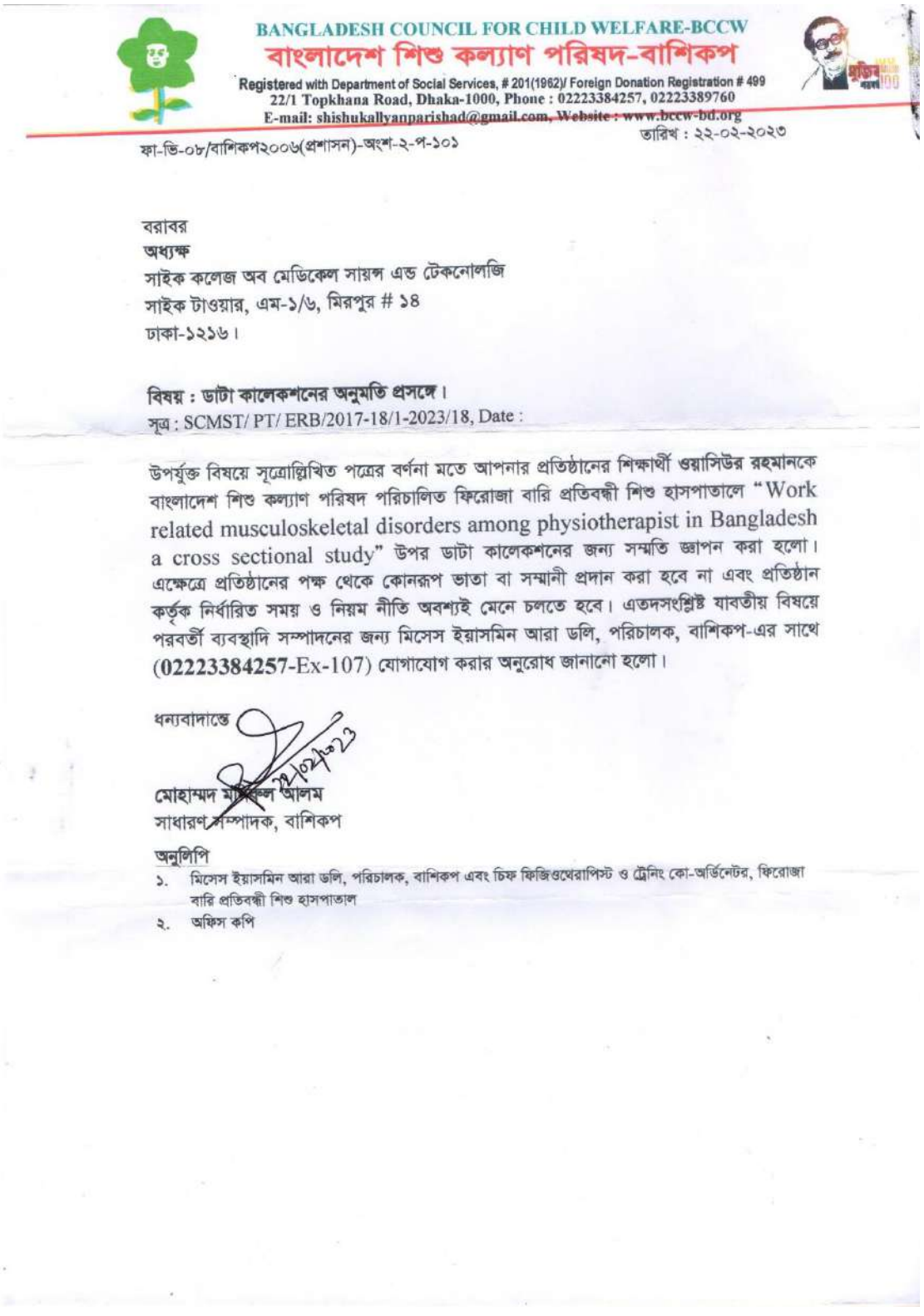
Thanking You,

12/02/'23
Head of ERB
Ethical Review Board
Saic College of Medical Science and Technology

13.02.23
Principal
Saic College of Medical Science and Technology
Mirpur-14, Dhaka-1216

Address: Saic Tower, M-1/6, Mirpur-14, Dhaka-1206. Mobile: 01936005804
E-mail: simt140@gmail.com, Web:www.saicmedical.edu.bd

APPENDIX – VIII



BANGLADESH COUNCIL FOR CHILD WELFARE-BCCW
বাংলাদেশ শিশু কল্যাণ পরিষদ-বাশিকপ
Registered with Department of Social Services, # 201(1962)/ Foreign Donation Registration # 499
22/1 Topkhana Road, Dhaka-1000, Phone : 02223384257, 02223389760
E-mail: shishukallyanparishad@gmail.com, Website : www.bccw-bd.org

ফা-ভি-০৮/বাশিকপ২০০৬(প্রশাসন)-অংশ-২-প-১০১

তারিখ : ২২-০২-২০২৩

বরাবর
অধ্যক্ষ
সাইক কলেজ অব মেডিকেল সায়েন্স এন্ড টেকনোলজি
সাইক টাওয়ার, এম-১/৬, মিরপুর # ১৪
ঢাকা-১২১৬।

বিষয় : ডাটা কালেকশনের অনুমতি প্রসঙ্গে।
সূত্র : SCMST/ PT/ ERB/2017-18/1-2023/18, Date :

উপর্যুক্ত বিষয়ে সূত্রোল্লিখিত পত্রের বর্ণনা মতে আপনার প্রতিষ্ঠানের শিক্ষার্থী ওয়াসিউর রহমানকে বাংলাদেশ শিশু কল্যাণ পরিষদ পরিচালিত ফিরোজা বারি প্রতিবন্ধী শিশু হাসপাতালে "Work related musculoskeletal disorders among physiotherapist in Bangladesh a cross sectional study" উপর ডাটা কালেকশনের জন্য সম্মতি জ্ঞাপন করা হলো। এক্ষেত্রে প্রতিষ্ঠানের পক্ষ থেকে কোনরূপ ভাতা বা সম্মানী প্রদান করা হবে না এবং প্রতিষ্ঠান কর্তৃক নির্ধারিত সময় ও নিয়ম নীতি অবশ্যই মেনে চলতে হবে। এতদসংশ্লিষ্ট যাবতীয় বিষয়ে পরবর্তী ব্যবস্থাদি সম্পাদনের জন্য মিসেস ইয়াসমিন আরা ডলি, পরিচালক, বাশিকপ-এর সাথে (**02223384257**-Ex-107) যোগাযোগ করার অনুরোধ জানানো হলো।

ধন্যবাদান্তে

22/02/23

মোহাম্মদ মাকসুল আলম
সাধারণ সম্পাদক, বাশিকপ

অনুলিপি
১. মিসেস ইয়াসমিন আরা ডলি, পরিচালক, বাশিকপ এবং চিফ ফিজিওথেরাপিস্ট ও ট্রেনিং কো-অর্ডিনেটর, ফিরোজা বারি প্রতিবন্ধী শিশু হাসপাতাল
২. অফিস কপি

APPENDIX – IX

Gant Chart

Activities/ Month	July 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	App 23	May 23	Jun 23
Proposal Presentation												
Introduction												
Literature Review												
Methodology												
Data collection												
Data Analysis												
Result												
1st progress presentation												
Discussion												
Conclusion and Recommendation												
2nd progress presentation												
Communication with supervision												
Final Submission												

APPENDIX – X