Activity Limitations among Individuals with Upper Extremity Musculoskeletal Disorders: A Cross-Sectional Study

By

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Dedication

To the Almighty, whose endless mercy, guidance and blessings that have sustained me throughout this journey. My heartfelt gratitude equally goes to my family whose constant love, prayers and unwavering support have made this accomplishment possible and teachers who inspired me to continue learning and growing.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

BHPI	Bangladesh Health Professions Institute
CRP	Centre for the Rehabilitation of the Paralysed
CTS	Carpal Tunnel Syndrome
DQT	De Quervain's Tenosynovitis
ICF	International Classification of Functioning, Disability and Health
IQR	Interquartile Range
IRB	Institutional Review Board
MSDs	Musculoskeletal disorders
OA	Osteoarthritis
OT	Occupational Therapy
RA	Rheumatoid Arthritis
SPSS	Statistical Package of Social Science
UEMSDs	Upper extremity musculoskeletal disorders

Abstract

Background: Upper extremity musculoskeletal disorders (UEMSDs) are common conditions that reduce functional ability and limit participation in daily life activities. Worldwide, upper-extremity musculoskeletal disorders affect 1.6%-53% of populations, while in Bangladesh musculoskeletal conditions are reported in 24.8%, frequently impairing upper-extremity function and limiting daily activities. Understanding the sociodemographic characteristics and the levels of activity limitation among affected individuals is essential for improving rehabilitation planning and service delivery in Bangladesh.

Aim: This study aimed to identify the level of activity limitations in individuals with upper extremity musculoskeletal disorders.

Methods: A cross-sectional quantitative study was conducted with 112 participants diagnosed with upper extremity musculoskeletal disorders at the Centre for the Rehabilitation of the Paralysed (CRP). Data was collected through face-to-face surveys using a self-developed structured questionnaire. Descriptive statistics, Inferential statistics and regression analyses were performed using SPSS version 20 to explore associations between sociodemographic variables and activity limitation.

Results: The mean age of participants was 47 years and most were female (72.3%). Carpal Tunnel Syndrome (26.5%) was the most common diagnosis followed by Trigger Finger (14.4%) and Tennis Elbow (12.6%). Pain was the most frequently reported symptom (97.3%). In terms of activity limitation, 52.7% of participants reported minimal difficulty, while 40.2% experienced moderate difficulty. Only 6.3% reported severe difficulty, and 0.9% were unable to perform activities. Gender ($p = .018$), age

group (p = .016) and area of residence (p = .015) showed significant associations with activity limitation. Regression results revealed that participants aged over 60 years and those living in semi-urban or rural areas had significantly different levels of activity compared to reference groups.

Conclusion: The study highlights that activity limitation is highly prevalent among individuals with UEMSDs and several sociodemographic factors influence functional performance. These findings emphasize the importance of early detection, ergonomic education, and rehabilitation strategies to enhance daily functioning and quality of life for affected individuals.

Keywords: Upper extremity musculoskeletal disorders, activity limitation, sociodemographic characteristics.

CHAPTER I: INTRODUCTION

1.1 Background

Musculoskeletal disorders (MSDs) are a major public health challenge worldwide, affecting people of all age groups and backgrounds (Woolf et al., 2012). Hand and wrist problems are quite common because we use our hands for almost everyday activities and work-related tasks (Skreckova & Macej, 2023). These problems usually happen because of small injuries to muscles and tissues, which can get worse depending on the kind of work a person does (Iwg & Nlgam, 2024).

Upper-extremity musculoskeletal disorders, especially those involving the hand , wrist are quite common and studies show that the number of people affected at a given time ranges from 1.6% to 53% ,many more experience them over a year where Conditions like carpal tunnel syndrome, tendon inflammation, arthritis, and nerve pinching are some of the main causes behind these problems (Huisstede et al., 2006).

Around one-third of adults in Bangladesh, according to a nationwide survey had no formal education and those with less education were more likely to experience musculoskeletal disorders (Zahid-al-quadir et al., 2020). Women are often more commonly affected by hand and upper-extremity musculoskeletal disorders while national surveys in Bangladesh show similar rates of these conditions in both men and women, many studies that focus specifically on hand problems report a higher number of female participants (Moniruzzaman et al., 2016). Studies on office workers in Bangladesh show that most were around 31 years old majority were female complained about musculoskeletal symptoms including in hands and wrists (Ahmed et al., 2023).

Hand musculoskeletal conditions present different difficulties because we depend on our hands for almost everything like self-care, work and leisure activities (Windt et al., 2007). Research shows that for patients visiting primary care with hand or wrist issues the most frequent diagnoses are osteoarthritis (17%),tenosynovitis (16 %) and nerve entrapment (12 %) (Windt et al., 2007). Hand musculoskeletal conditions it hard to do everything from small, precise movements to basic everyday tasks for example daily activities such as dressing, feeding, personal hygiene, walking and rising from a chair, affecting anywhere from 6% to 55% of people depending on the task (Banerjee, Sl, et al., 2012). In developing countries like Bangladesh, most attention has been given to spine and lower-extremity problems while very little data available on hand and wrist problems, particularly among those who attend hand therapy (Zahid-al-quadir et al., 2020). This research provides better knowledge on level of activity limitations and association between sociodemographic characteristics and activity limitation in Individuals with musculoskeletal complaints.

1.2 Justification of the study

Musculoskeletal disorders (MSDs) are a serious health challenge faced by people around the world and one of the main reasons so many individuals struggle with disability, affecting many individuals and leading to substantial financial and societal impacts (Roll, 2017). In Bangladesh, it became a common and growing health concern as a large proportion of the population is involved in occupations that require repetitive movements, prolonged postures and manual handling such as garment work, agriculture, household activities and informal labor. These activities frequently place excessive strain on the upper limbs which lead to upper extremity musculoskeletal complaints that’s limit their daily functioning. Conducting this study will help to gain an understanding of how upper extremity musculoskeletal complaints are distributed

among different groups of people, particularly in terms of gender and types of occupation. This information will make it possible to identify the groups who are at risk of developing these disorders. By identifying the high-risk groups early, preventive measures can be implemented to reduce the occurrence and severity of these complaints. Focusing on prevention is important, as it can help limit long-term disability, reduce the need for structured rehabilitation programs and improve overall quality of life.

Occupational therapists specializing in hand therapy are central to early intervention and functional rehabilitation in upper-limb conditions (Sheerin et al., 2022). They require detailed knowledge about upper extremity musculoskeletal disorders to provide effective and patient-centered care. The study's findings can help develop more targeted and individualized treatment plans by focusing on the specific difficulties people face in their daily activities. Understanding these challenges allows interventions to be designed that directly address patients' functional needs, thereby improving independence and overall quality of life. In addition, the research can provide valuable information about the most common musculoskeletal complaints, how they affect daily activities and which areas require the most attention. By concentrating on the actual difficulties experienced by individuals, treatment programs can be tailored to enhance comfort, functionality and overall well-being. Collected data can also guide therapy units in planning practical and effective interventions, selecting appropriate tools and exercises and delivering care that meets the real needs of patients.

Furthermore, findings from this study can guide resource allocation and help shape evidence-based therapy programs that address patient's most pressing functional limitations. Ultimately, the study contributes to better patient outcomes, increased

functional independence, and an improved quality of life for individuals affected by upper extremity musculoskeletal disorders.

1.3 Operational Definition

1.3.1 Upper Extremity Musculoskeletal Disorders (UEMSDs)

Upper extremity musculoskeletal disorders (UEMSDs) are a group of conditions that can affect different parts of the upper limb, including the muscles, tendons, nerves, ligaments, joints and soft tissues of the shoulder, arm, elbow, wrist and hand (Graben et al., 2022).

1.3.2 Activity Limitation

According to the he ICF model, activity is described as the execution of a task or action by an individual, and activity limitations represent the degree of difficulty a person experiences while performing these tasks (Centres, 2001).

1.4 Aim of the study

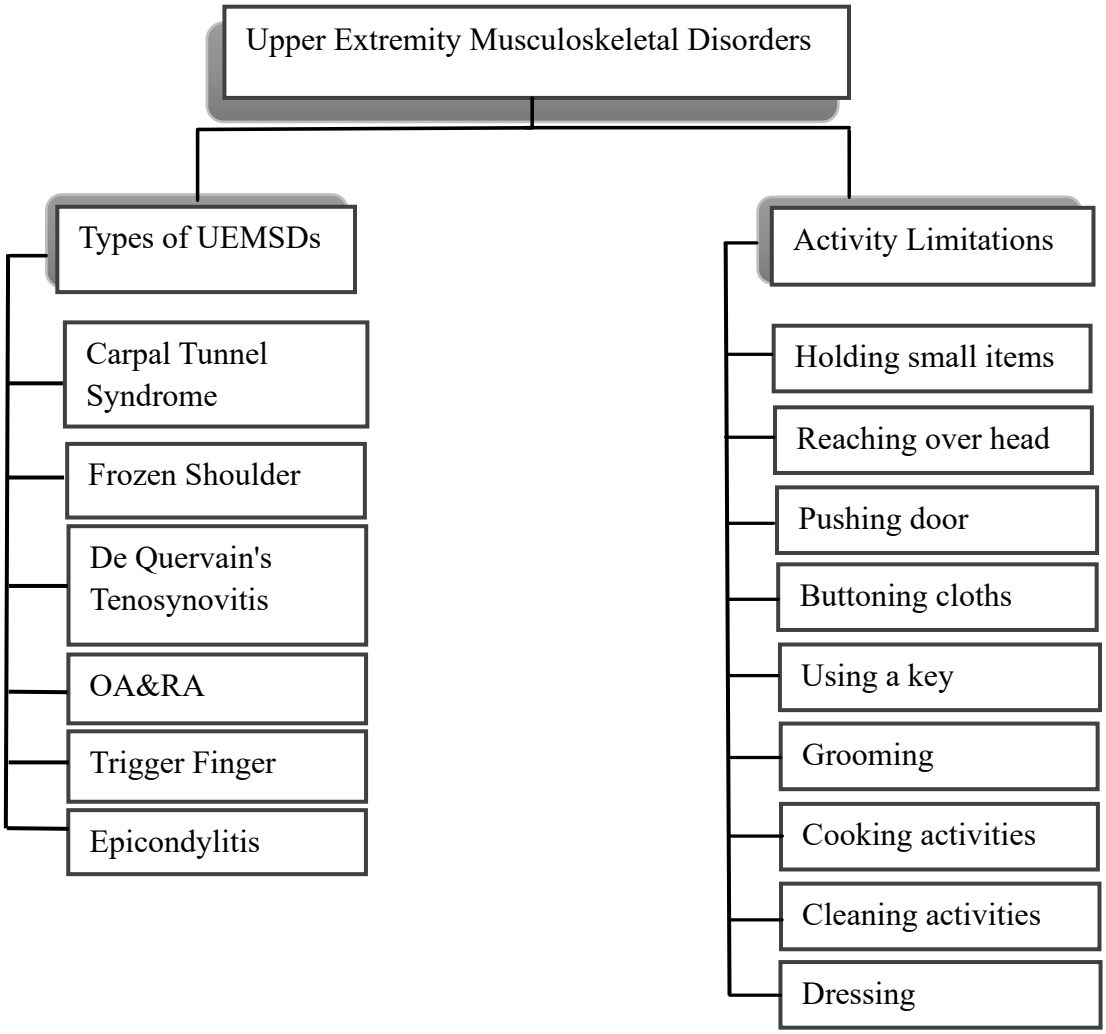
To identify the level of activity limitations among individuals with upper extremity musculoskeletal disorders.

CHAPTER II: LITERATURE REVIEW

This chapter presents a review of the relevant literature on the activity limitations experienced by UEMSDs patients in their daily tasks. This literature review synthesizes evidence on the types of upper extremity musculoskeletal complaints, sociodemographic characteristics and the types of activity limitations experienced by individuals. Research articles published in the past two decades were retrieved through systematic searches conducted in databases including Google Scholar, PubMed and Scopus.

Figure 2.1

Overview of literature review findings



2.1 Overview of upper extremity musculoskeletal disorders

A study reported that upper extremity musculoskeletal disorders (UEMSDs) are a group of conditions that can affect different parts of the upper limb, including the muscles, tendons, nerves, ligaments, joints and soft tissues of the shoulder, arm, elbow, wrist and hand (Graben et al., 2022). UEMSDs are commonly defined as work-related conditions that develop due to factors such as repetitive movements, excessive force, awkward positioning or prolonged exposure to vibration which can lead to inflammation, nerve compression or degenerative changes in the affected tissues. A study found that symptoms usually last for at least a week or keep coming back within a year and can make it difficult for a person to move their arm or hand normally leading to challenges in carrying out everyday tasks (Huisstede et al., 2006). Sociodemographic factors such as age, sex, marital status, education and employment play a significant role in the presentation of upper extremity musculoskeletal complaints. Additionally, a cross-sectional study conducted in the United Kingdom found that older age and manual labor occupations were significantly associated with an increased risk of developing UEMSDs (Walker-Bone & Cooper, 2005). Several studies have observed that musculoskeletal symptoms are more commonly reported among middle-aged and older adults (Felipe & McCombie, 2002). A national survey conducted in Bangladesh found among 1,843 adults found a mean participant age of 40.5 years nearly equal gender representation (892 men, 951 women) and approximately one-third lacked formal education (Zahid-al-quadir et al., 2020).

Multiple studies indicate a higher prevalence of musculoskeletal complaints among females compared to males (Bellan et al., 2016). In systematic reviews shows that women tend to experience UEMSDs more often than men, whether in the general population or in the workplace (Treaster & Burr, 2004). Additionally, the impact on

functioning is often rated as more severe in females (T. Wang et al., 2021). Canosa-Carro et al (2022) found that females tend to report a higher incidence of hand and wrist tendinopathies such as carpal tunnel syndrome in the general population. Significantly across different occupational groups due to the nature of job tasks and physical demands involved. Punnett & Wegman (2004) found that manual laborers who often engage in repetitive, strenuous physical activities frequently report higher incidences of musculoskeletal disorders involving the upper limbs, shoulders and back. Office work has been linked with a high prevalence of upper extremity musculoskeletal symptoms particularly carpal tunnel syndrome and tendonitis, which are associated with repetitive motions and sustained keyboard use (Punnett & Wegman, 2004). A study highlighted that homemakers represent a substantial occupational group often overlooked in musculoskeletal research. Household activities involving repetitive upper limb motions and static postures have been shown to contribute to hand and wrist musculoskeletal complaints among homemakers (Habib et al., 2012). Similarly, kitchen workers involved in highly repetitive and manual tasks display elevated rates of MSDs (Park et al., 2021). Also, garment workers are frequently exposed to repetitive hand movements which significantly contribute to the development of musculoskeletal complaints especially in the upper limbs and hands (Punnett & Wegman, 2004).

Several studies have showed link between comorbid conditions and UEMSDs for example, diabetes mellitus is associated with increased prevalence of conditions like carpal tunnel syndrome and trigger finger (Al Shahrani et al., 2021; Makkouk et al., 2008). Hyperglycemia can lead to structural changes in tendons and ligaments, increasing susceptibility to repetitive strain injuries in the upper extremities (Amadio, 2005). Similarly, obesity has been identified as a significant risk factor for UEMSDs, particularly affecting the shoulder, wrist and hand through both mechanical overload

and systemic low-grade inflammation (Shiri et al., 2006; Walker-Bone & Cooper, 2005). Studies indicate that individuals with hypertension report higher prevalence of pain and functional limitations in the upper extremities (Ahmed et al., 2023; Shin, 2019). Thyroid disorders, particularly hypothyroidism are similarly implicated in tendon and joint stiffness predisposing patients to conditions such as trigger finger and carpal tunnel syndrome (Makkouk et al., 2008; Akhtar et al., 2005).

In Canada, a cross-sectional study found that when musculoskeletal disorders affect the hand which can make everyday tasks difficult - like gripping, lifting, writing, buttoning clothes, cooking or using tools. Additionally, this often leads to reduced independence and quality of life (Gignac et al., 2008).

2.1.1 Types of upper extremity musculoskeletal disorders

UEMSDs patients commonly present with conditions such as De Quervain's tenosynovitis, carpal tunnel syndrome, osteoarthritis, trigger finger, frozen shoulder and various soft tissue injuries. Common upper-limb musculoskeletal conditions encountered in hand therapy settings include tendinitis (such as lateral epicondylitis), tenosynovitis (like de Quervain's disease), carpal tunnel syndrome, strains of the thumb and wrist as well as generalized pain.

Lateral epicondylitis (tennis elbow) and medial epicondylitis (golfer's elbow) are overuse injuries that affect the tendons attached to the outer and inner parts of the elbow (Shiri et al., 2006). A systematic review reported that the point prevalence of lateral epicondylitis is reported between 1.3% and 4.5%, whereas medial epicondylitis is less frequent affecting around 0.3% to 1.1% of the population (Prevalence and Impact of Musculoskeletal Disorders of the Upper Limb in the General Population, n.d.).

Carpal tunnel syndrome is the most common peripheral nerve entrapment disorder caused by compression of the median nerve at the wrist. A study found that prevalence of carpal tunnel syndrome is 3.8% in the general population with higher rates among women (Melhorn & Talmage, 2013).

Frozen shoulder also known as Adhesive capsulitis is characterized by pain along with gradually increasing stiffness of the shoulder joint capsule. A study reported the prevalence of frozen shoulder from 2% to 5% in the general population (Zuckerman & Rokito, 2011).

Hand osteoarthritis (OA) is a degenerative condition that involves the carpometacarpal, metacarpophalangeal and interphalangeal joints (Bijlsma et al., 2011). Zhang et al (2002) found that hand OA becomes more common as people age a study reported 44.6% prevalence among older adults.

Trigger finger develops when the flexor tendon becomes inflamed and thickened leading to the finger catching or locking while bending and straightening (Makkouk et al., 2008). It is particularly common in individuals with diabetes and studies reported prevalence rates of 3.2% in diabetic populations compared to 1.2% in non-diabetics (Akhtar et al., 2005).

De Quervain's tenosynovitis is characterized by inflammation of the abductor pollicis longus and extensor pollicis brevis tendons, leading to pain along the radial aspect of the wrist (JAAOS - Journal of the American Academy of Orthopaedic Surgeons, n.d.). In the general population, prevalence is estimated to range from 0.5% among men to 1.3% among women (Prevalence and Impact of Musculoskeletal Disorders of the Upper Limb in the General Population, n.d.).

2.1.2 Activity Limitations

A cross-sectional study reported that Patients with UEMSDs frequently report limitations in personal care, household chores and professional duties (Amadio, 2005). According to the International Classification of Functioning, Disability and Health (ICF) framework these limitations under “activity restrictions” reflecting a person’s difficulty in executing daily tasks (International Classification of Functioning, Disability and Health (ICF), n.d.). The ICF model provides such a framework which offer a dynamic and holistic perspective on the relationship between health conditions, body functions, activities and participation (Forget & Higgins, 2014).

In India, a cross-sectional study found that Patients with musculoskeletal disorders often experience appreciable limitations in activities of daily living with one study reporting that 9.5% had challenges with dressing and up to 50% struggled with tasks such as rising from bed indicating significant impacts on independence and daily function (Banerjee, Sl, et al., 2012). A cross-sectional study conducted in the Netherland reported that patients undergoing therapy often experience limitations with different types of grips such as like holding small items, gripping round objects, using a key as well as difficulties in performing common occupational tasks like using a computer mouse, pushing objects and bending their wrist (Van Schaaijk et al., 2020).

A cross-sectional study in Saudi Arabia found that female with carpal tunnel syndrome experiencing difficulty in performing household chores (Al Shahrani et al., 2021). Makkouk et al (2008) reported that patients with trigger finger commonly have trouble with gripping and precise hand movements, including activities like writing or picking up objects. In hand osteoarthritis, patients often report difficulty performing fine motor tasks such as buttoning clothes, writing, and cooking (Zhang et al., 2002). Zuckerman & Rokito (2011) found that in frozen shoulder, this greatly impacts the

ability to perform self-care activities including dressing, bathing and reaching overhead. Patients with epicondylitis commonly called tennis elbow often have difficulty in performing activities such as door handles, lifting objects, dressing, grooming, household tasks (e.g., cooking, cleaning) and using tools (Banerjee, Jadhav, et al., 2012).

2.2 Key Gaps of the Studies

- Most studies focus only on a few UEMSDs (like carpal tunnel syndrome, epicondylitis and De Quervain's) while other upper extremity conditions are not well studied.
- Studies often state that females are more affected than males but exact male-female ratios are not provided.
- Most available studies come from highly developed or upper-middle developed countries.
- Most studies do not report whether participants live in urban or rural areas which limit understanding of environmental environment.

CHAPTER III: METHODS & MATERIALS

3.1 Study Question, Aim, Objective

3.1.1 Study Question

What are the levels of activity limitation among individuals with upper extremity musculoskeletal disorders experience in their daily activities?

3.1.2 Study Aim

To identify the level of activity limitations among individuals with upper extremity musculoskeletal disorders.

3.1.3 Study Objective

- To find out the sociodemographic characteristics among UEMDs patients.
- To identify the level of activity limitations experienced by UEMDs patients in their daily tasks.
- To identify the association between sociodemographic characteristics and activity limitation among individuals with UEMDs.

3.2 Study Design

3.2.1 Study Method

In this study, the student researcher used a quantitative study design which can collect and analyze data that is structured and represented numerically. It provides measurable and comparable data which is essential for analyze that's why it is the best study design to collect data (Ahmad et al., 2019). One of the central goals was to build accurate and reliable measurements that allowed for statistical analysis. The student researcher analyzed the data, which was structured and followed by a statistical analytic method.

The results were presented numerically and statistically. In quantitative research design, the results are also presented numerically and statistically. Therefore, the student researcher selected this method for this study (Crowe et al., 2011).

3.2.2 Study Approach

A cross-sectional approach was utilized for research under quantitative methods. Cross-sectional studies were characterized by the collection of relevant information (data) at a given point in time (Kesmodel, 2018). Cross sectional studies provide a snapshot of the outcome and its associated characteristics at a particular point in time (Levin, 2006). The student researcher analyzed data over a period of time across a sample population to identify the types of musculoskeletal complaints, sociodemographic characteristics and types of activity limitations experienced by these patients in their daily tasks due to musculoskeletal complaints which was similar to a snapshot (X. Wang & Cheng, 2020).

3.3 Study Setting and Period

3.3.1 Study Setting

The study was conducted at:

- Center for the Rehabilitation of the Paralysed (CRP), Savar, Dhaka
- Center for the Rehabilitation of the Paralysed (CRP), Mirpur-14, Dhaka

3.3.2 Study Period

The study period was from June 2025 to December 2025 with data collection conducted between 2nd August 2025 and 15th September 2025.

3.4 Study Participant

3.4.1 Study Population

People who were diagnosed with upper extremity musculoskeletal disorders.

3.4.2 Sampling Techniques

This study follows convenience sampling which allows the student researcher to collect data from participants who are easily accessible and willing to take part (X. Wang & Cheng, 2020). Using this sampling, the student researcher contacted any available member of the target population who had agreed to participate. This technique was both time-efficient and cost-effective. Also this is the most suitable sampling technique for selecting the participants for this study (Szolnoki & Hoffmann, 2013).

3.4.3 Inclusion Criteria

- Participants who have been medically diagnosed with upper extremity musculoskeletal conditions.
- Both Male and Female Persons.
- Age 18 years and above.

3.4.4 Exclusion Criteria

- Participants with cognitive impairments or mental health conditions that affected their ability to participate in interviews or surveys.
- Participants who have speech problems.

3.4.5 Sample Size

Investigators used the Cochran formula $n=\frac{Z^2pq}{d^2}$ (as the sample population and population portion are unknown) for calculating the study sample. Here, the prevalence

of musculoskeletal condition is 24.8% (Zahid-al-quadir et al., 2020).The confidence interval was 95% and 5% error level. Now,

z= 1.96 (confidence interval 95%)

d= 0.05 (error level 5%)

p= 0.248 (24.8% prevalence)

q=(1- p)=(1-0.248)=0.752

n= $\frac{Z^2pq}{d^2} = \frac{(1.96)^2 \times 0.248 \times 0.752}{(0.05)}$ = 286.6 = 287+10% (Non response rate)

= 315.7 = 316

The total sample required 316 to conduct the study.

The student researcher could collect 112 data due to time limitations.

3.5 Ethical Consideration

3.5.1 Ethical Clearance

The ethical clearance was sought from the Institutional Review Board (IRB) explaining the purpose of the research, through the Department of Occupational Therapy, Bangladesh Health Professions Institute (BHPI). The IRB number is CRP-BHPI/IRB/07/2025/1106. Permission was also taken from the Head of the Occupational Therapy Department at the Centre for the Rehabilitation of the Paralysed (CRP) including the Savar (Head Office) and Mirpur branches where hand therapy services are available.

3.5.2 Informed consent (Information Sheet, Consent Form, Withdrawal Form)

3.5.2.1 Information Sheet/ Participant Explanatory Statement

An information sheet was a written document provided to participants for the research that explained the purpose, confidentiality and the rights of the participants involved in the study.

3.5.2.2 Consent Form

Consent Form is that research participants can enter research voluntarily with full information about what it means for them to take part and that they give consent before they enter the research.

3.5.2.3 Withdrawal Form

By using this form, participants were able to voluntarily withdraw their participation from the research within two weeks after the interview had been conducted.

3.5.3 Unequal relationship

The student researcher did not know any participants personally. She selected the participants according to inclusion and exclusion criteria. So, student researcher had no unequal relationship or power relationship with the participants.

3.5.4 Risk and Beneficence

It was explained to the participants that this research has no physical, social or psychological risk to the participants and they did not receive any benefit from the student researcher. Also, student researcher did not pay the participants for their data given.

3.5.6 Confidentiality

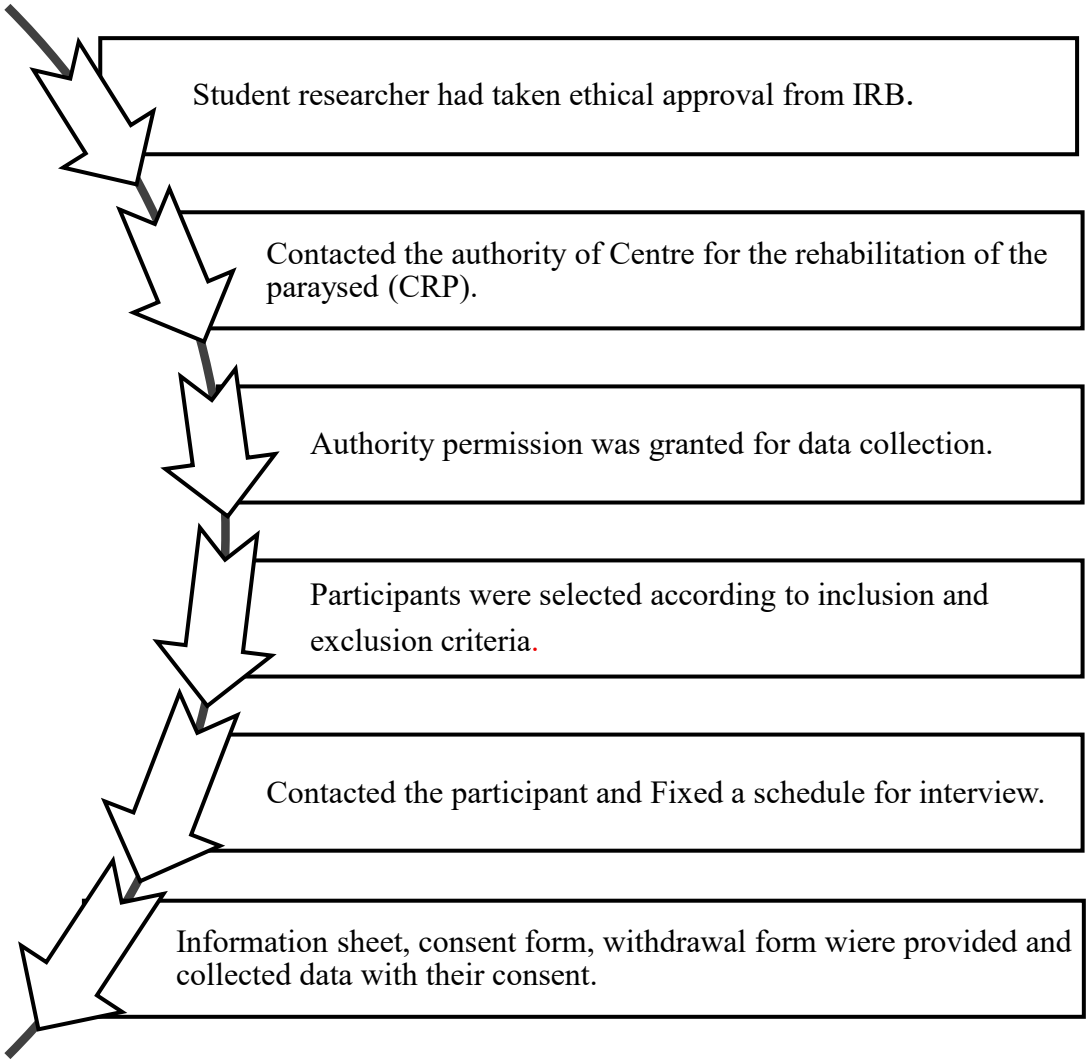
The student researcher ensured strict confidentiality of all participant information. The participant's information was shared only with the supervisor as stated in the information sheet. Participants were fully informed about confidentiality through the information sheet.

3.6 Data Collection Process

3.6.1 Participant Recruitment process

Figure 3.6.1

Overview of Participant Recruitment process



3.6.2 Data Collection Method

Data collection is mandatory to accomplish the research process. To collect data, the student researcher used the face-to-face survey method. First, the student researcher introduced herself and explained the aim, objectives and purpose of the research. Then, consent was obtained from the participants if they wished to participate voluntarily.

3.6.3 Data Collection Instrument

The student researcher used a self-developed question to collect data from the participants. The self-developed question was divided into two sections. Section A included Sociodemographic Information like age, gender, marital status, area of residence, educational level, current occupation, years of service in current occupation, number of family members and Comorbid Condition. Section B included Activity Related Information.

3.6.4 Field Test

A field test is a preliminary trial conducted before the main data collection to check whether the questions are clear to assess how long it takes participants to respond and to ensure that everything works smoothly (Felipe & McCombie, 2002). The student researcher translated the question into Bengali which is the native language of Bangladesh with the help of supervisor and a writer skilled in formal Bengali writing. The student researcher conducted the field test of 3 participants before collecting actual data from the CRP Savar Branch. The student researcher took consent from participants and conducted field test using Bengali version of self-developed question. Through this field test, some changes were fixed later like some questions were included which helped to maintain the question’s quality.

3.7 Data Management and Analysis

After completing the initial data collection, every questionnaire was checked again to find out any mistakes or unclear information. Then the investigator set up the variable and input all data into SPSS version 20. The document was prepared in Microsoft Office Word and data were analyses using the software Statistical Package for Social Science (SPSS), version 20.0.

3.8 Quality Control and Quality Assurance

All data was collected and entered accurately with the concern of the respective supervisors and by following all instructions. Before collecting the final data, a field test was conducted to evaluate the participants' understanding of the self-developed questions. The student researcher selected 3 participants for the field test. After completing the field test, the student researcher modified the question based on the field test experience. After completing the field test, the student researcher modified the question based on the field test experience. Through this field test, the student researcher helped to identify the difficulties and get a chance to correct the questions to make them easier to understand.

CHAPTER IV: RESULTS

This chapter represents the findings of the study. The study findings are presented in tables and descriptions. It includes socio demographic information, level of activity limitation, association between socio-demographic information and activity limitation.

4.1 Sociodemographic information of the participants

Table 4.1

Distribution of sociodemographic information of the participants

Variables	Category	Frequency (n)=112	Percentage (%)
Age (in years)	21-40 years	42	37.5
	41-60 years	51	45.5
	>60 years	19	17.0
Median=47 years, IQR= (35-57), Minimum=21, Maximum=74			
Gender	Male	31	27.7
	Female	81	72.3
Marital Status	Married	93	83
	Unmarried	8	7.1
	Widow	11	9.8
Area of residence	Urban	76	67.9
	Semi-Urban	15	13.4
	Rural	21	18.8
Educational Level	No formal education	11	9.8
	Primary	10	8.9
	Secondary	44	39.3
	Higher Secondary	17	15.2
	Graduate and above	30	26.8
Current Occupation	Housewife	50	44.6
	Office worker	10	8.9
	Student	5	4.5
	Business	8	7.1
	Teacher	11	9.8
	Garment worker	12	10.7
	Others	16	14.3
Years of service in current occupation	1-18 years	20	18.2
	19-36 years	13	11.8

	37-54 years	77	70.0
Median=20.00, IQR= (10-35)			
Working hour	3-7 hours	43	38.4
	8-12 hours	54	48.2
	>12 hours	13	11.6
Median=8.00, IQR= (10-6)			
Monthly family income (in Taka)	7000-36000	32	28.6
	37000-66000	46	41.1
	67000-96000	26	23.2
	>96000	8	7.1
Median=50000.00, IQR= (70000-35000)			
Number of family member	2-7	105	93.8
	8-13	7	6.3
Primary earner	Yes	44	39.3
	No	68	60.7
Affected Side	Left	37	33.0
	Right	50	44.6
	Both	25	22.3
Duration of condition	1-24 months	67	59.8
	25- 48 months	21	18.8
	>48 months	24	21.4
Median=6.00, IQR= (12-3)			
Hand therapy session received	1-15 sessions	87	77.7
	16-30 sessions	11	9.8
	>30 sessions	14	12.5
Median= 3.00, IQR= (6-1)			

Table 4.1 shows an overview of the socio-demographic characteristics of the 112 participants who are diagnosed with upper extremity musculoskeletal disorders. The socio-demographic characteristics included the participant's age, gender, marital status, area of residence, educational level, family members, current occupation, Years of service in current occupation, working hours, monthly income, primary earner, affected side, duration of condition and hand therapy session received. The study included participants across three age groups with most participants 45.5% (n=51) aged 41-60 years (n=51) followed by 37.5% (n=42) aged 21-40 years and 17% (n=19) aged > 60 years. Females represented a higher proportion of the participants like 72.3% (n= 81)

compared to males like 27.7% (n= 31). The majority participants 83% (n=93) were married, 7.1% (n=8) were unmarried and 9.8% (n=11) were widows. Most of the participants, 67.9% (n=76) were in urban areas, 13.4% (n=15) were in semi-urban areas and 18.8% (n=21) were in rural areas. Regarding educational level, 26.8% (n=30) of the participants had graduated at the graduate or post-graduate level, 15.2% (n=17) were higher secondary level ,39.3% (n=44) were secondary level ,8.9% (n=10) were primary level and 9.8% (n=11) were uneducated participants.

The occupation analysis shows that around half of the participants 44.6% (n=50) are housewives. Next garment workers at 10.7% (n=12), teachers at 9.8% (n=11), office workers at 8.9% (n=10) and businessman at 7.1% (n= 8). A smaller proportion of subjects are students at 4.5% (n=5) and other professions (Homeopath, Salesman, Contractor, Baker, Driver, Beautycian, Shopkeeper, Farmer, Developer, Security guard, Defense Officer, Retired) at 14.3% (n=16). Most of the participants, 70.0% (n = 77) had long work experience serving 37-54 years. Fewer participants, 18.2% (n=20) had shorter experience of 1-18 years and only 11.8% (n=13) had experience of 19-36 years of service. Almost half of the participants 48.2% (n=54) worked 8-12 hours per day. About 38.4% (n=43) worked 3-7 hours per day while only a small proportion 11.6% (n=13) worked more than 12 hours per day.

Most participants lived in nuclear households with 93.8% (n=105) of participants reporting 2 to 7 family members and 5.0% (n=3) having 7 to 11 family members. Majority participants, 93.8%(n=105) live in families with 2-7 members and only 6.3%(n=7) came from larger families with 8-13 members. Less than half of the participants, 39.3% (n=44) reported that they are the primary earners in their households while 60.7% (n=68) reported that they are not the main income providers.

Regarding the affected hand, 44.6% (n=50) of participants had their right hand affected, 33% (n = 37) had their left hand affected and 22.3% (n=25) had both hands affected. Majority participants 59.8% (n=67) had their condition for 1 to 24 months. Another,18.8% (n=21) participants had their condition for 25 to 48 months and 21.4% (n=24) participants had been dealing with their condition more than 48 months. Most of the participants77.7% (n=87) received 1–15 hand therapy sessions,9.8% (n=11) participants received 16–30 sessions and 12.5% (n=14) participants had more than 30 sessions.

4.2 Comorbid condition status

Table 4.2

Comorbid condition status among participants

Variable	Category	Frequency (n)=112	Percentage (%)
Comorbid Condition	No comorbid	45	40.2
	Diabetic Mellitus	39	58.2
	Hypertension	34	50.7
	Heart Disease	8	11.9
	Thyroid Disease	5	7.5
	Obesity	15	22.4

About 58.2% (n=39) of participants had diabetes mellitus,50.7% (n=34) had hypertension,11.9% (n=8) had heart disease, 7.5% (n=5) had thyroid disease and 22.4% (n=15) had obesity. These findings indicate that diabetes and hypertension were the most common comorbid conditions among the participants.

4.3 UEMSDs and symptom status

Table 4.3

UEMSDs and symptom status among participants

Variables	Category	Frequency (n)=112	Percentage (%)
Diagnosis	CTS	31	26.5
	Tennis Elbow	14	12.6
	DQT	11	9.9
	RA & OA	8	7.2
	Fracture	13	11.7
	Trigger Finger	16	14.4
	Frozen Shoulder	13	11.7
	Colles Fracture	5	4.5
	Others	6	5.4
Symptoms	Pain	109	97.3
	Tingling	29	25.9
	Numbness	19	17.0
	Weakness	45	40.2
	Stiffness	8	7.1
	Swelling	25	22.3
	Tenderness	6	5.4
	Locking	16	14.3
	Others	3	2.7

Most of the participants were diagnosed with Carpal Tunnel Syndrome 26.5% (n=31). Next following conditions were Trigger Finger 14.4% (n=16), Tennis Elbow 12.6% (n=14), Frozen Shoulder 11.7% (n=13) and fractures 11.7% (n = 13). De Quervain's Tenosynovitis 9.9% (n=11) was also reported but in a smaller group. Only a few participants had RA & OA 7.2% (n=8), Colles's fracture 4.5% (n=5) and others (Ulnar neuropathy, Rotator cuff injury, Hand stiffness) 5.4%(n=6).

For symptoms, almost all participants reported pain 97.3% (n=109). Next following symptoms were weakness 40.2% (n=45), tingling 25.9% (n=29) and swelling 22.3% (n=25). Fewer participants reported numbness 17.0% (n=19), locking 14.3% (n=16), stiffness 7.1% (n=8), Tenderness 5.4% (n=6) and other symptoms 2.7% (n=3).

4.4 Level of activity limitation

Table 4.4

Level of activity limitation

Category	Frequency (n)=112	Percentage (%)
Performs without difficulty	0	0
Performs with minimal difficulty	59	52.7
Performs with moderate difficulty	45	40.2
Performs with severe difficulty	7	6.3
Unable to perform the activity	1	.9

This table 4.4 shows that more than half of the participants 52.7% (n=59) reported performing activities with minimal difficulty. Additionally, 40.2% (n=45) participants reported performing activities with moderate difficulty, while 6.3% (n=7) participants reported performing activities with severe difficulty. A very small proportion, 0.9% (n=1) were unable to perform the activity. Not a single respondent 0%, (n=0) reported performing activities without any difficulty.

4.5 Association between Socio-demographic data and activity limitation

Table 4.5

Association between Socio-demographic data and activity limitation (Mann-Whitney U test)

Variables	Category	n	Activity limitation				
			Mean rank	U	W	Z	*P* value
Gender	Male	31	44.79	892.500	1388.500	-2.362	**.018**
	Female	81	60.98				
Number of family member	2-7	105	54.90	199.000	5764.000	-1.514	.130
	8-13	7	75.33				
Primary earner	Yes	44	51.05	1256.000	2246.000	-1.431	.153
	No	68	60.03				

Table 4.5 represents the Mann-Whitney U test results (dependent variable activity limitations and independent variable gender with level 5. The chi-square value is 0.018 which indicates activity limitations among participants among different genders).

4.6 Linear regression assessing the association between gender and activity limitations

Table 4.6

Linear regression assessing the association between gender and activity limitations

Predictor	**Activity limitation**			
Gender	**B Unstandardized Coefficients**	**95%CI**		***P* value**
Male	Reference			
Female	2.122	-.332	4.577	.089

Table 4.8 In regression result, female has 2.122 times higher the activity limitation than male with a range of -.332 to 4.577 which is statistically not significant.

4.7 Association between Socio-demographic data and activity limitation

Table 4.7

Association between Socio-demographic data and activity limitation (Kruskal Walis H Test)

Variable	**Category**	**n**	**Activity limitation**			
			Mean rank	**df**	**X^2**	***P* value**
Age	21-40 years	42	66.40	2	8.278	**.016**
	41-60 years	51	53.92			
	≥61 years	19	41.53			
Marital Status	Married	93	57.10	2	.301	.860
	Unmarried	8	50.63			
	Widow	11	55.68			
Area of residence	Urban	76	50.80	2	8.340	**.015**
	Semi-urban	15	75.10			
	Rural	21	63.83			
Educational Level	No formal education	11	62.82	4	3.851	.427
	Primary	10	56.95			
	Secondary	44	58.85			

	Higher Secondary	17	62.79			
	Graduate and above	30	47.02			
Current Occupation	Housewife	50	60.68	5	5.270	.137
	Office worker	10	40.40			
	Student	5	53.40			
	Business	8	57.00			
	Teacher	11	46.67			
	Garment worker	12	58.10			
	Others	16	51.38			
Years of service in current occupation	1-18 years	20	60.28	2	1.881	.391
	19-36 years	13	45.00			
	37-54 years	77	56.03			
Working hour	3-7 hours	43	53.27	2	2.792	.248
	8-12 hours	54	53.94			
	≥13 hours	13	69.35			
Monthly family income	7000-36000	32	57.47	3	3.809	.283
	37000-66000	46	52.68			
	67000-96000	26	55.81			
	≥97000	8	76.81			
Affected Side	Left	37	55.08	2	.115	.944
	Right	50	56.95			
	Both	25	57.70			
Duration of condition	1-24 months	67	58.76	2	1.046	.593
	25- 48 months	21	50.62			
	≥49 months	24	55.33			
Hand therapy session received	1-15 sessions	87	58.25	2	3.091	.213
	16-30 sessions	11	60.64			
	≥ 31 sessions	14	42.36			

Table 4.7 represents the Kruskal Walis H Test results (dependent variable activity limitations and independent variable age, area of residence with level 5. The chi-square value is 0.016 and 0.015 which indicates activity limitations among participants are different in age and area of residence).

4.8 Linear regression assessing the association between age and activity limitations

Table 4.8

Linear regression assessing the association between age and activity limitations

Predictor	**Activity limitation**			
Age	**B Unstandardized Coefficients**	**95%CI**		***P* value**
21-40 years	Reference			
41-60 years	-2.270	-4.639	.100	.060
>60 years	-3.068	-5.164	-.971	**.005**

In regression output, group of 41-60 years -2.270 times lower the activity limitation with a range -4.639 to 0.100 than age group of 21-40 years which is statistically not significant.

On the other hand, group of > 60 years 3.068 times lower the activity limitation with a range -5.164 to -0.971 than age group of 21-40 years which is statistically significant.

4.9 Linear regression assessing the association between Area of residence and activity limitations

Table 4.9

Linear regression assessing the association between area of residence and activity limitations

Predictor	**Activity limitation**			
Area of residence	**B Unstandardized Coefficients**	**95%CI**		***P* value**
Urban	Reference			
Semi-Urban	3.464	.227	6.701	**.036**
Rural	1.934	.051	3.817	**.044**

In regression output, group of semi-urban people are 3.464 times higher the activity limitation with a range 0.227 to 6.701 and group of rural 1.934 times higher the activity limitation with a range 0.051 to 3.817 than the group of urban which is statistically significant.

CHAPTER V: DISCUSSION

The aim of this study was to identify the level of activity limitations in individuals with upper extremity musculoskeletal disorders. Data was collected through face-to-face surveys. A total of 112 participants were taken during this study period.

The study finding show that Female participants constituted a larger proportion of those experiencing upper extremity musculoskeletal disorders compared to males. This finding aligns with previous studies reporting that females tend to experience and report musculoskeletal symptoms more frequently and with greater functional impact than males (Wang et al., 2021; Treaster & Burr, 2004). Most participants belonged to the 41-60 years age group which indicates that middle-aged adults were the most affected with upper extremity musculoskeletal disorders. This finding seems different from earlier studies, which usually show that musculoskeletal problems and functional difficulties increase as people get older (Felipe & McCombie, 2002). The area of residence showed that most participants lived in urban areas which reflect urban residents affected more compared to those living in semi-urban and rural areas. In terms of current occupation, nearly half of the participants were housewives, followed by garment workers, teachers, office workers, business owners, students and other occupations. This finding shows that both household and occupational activities involving repetitive hand use may contribute to upper extremity musculoskeletal disorders. This finding seems similar to previous studies, which show that repetitive hand use in household and occupational activities such as homemaking, garment work, and office tasks may contribute to upper extremity musculoskeletal disorders which leads to pain and functional limitation (Habib et al., 2012; Punnett & Wegman, 2004). Regarding years of service in the current occupation, most participants had worked for

37–54 years, with a median duration of 20 years, smaller proportions had worked for 1–18 years and 19–36 years. This indicates long-term exposure to occupational or daily activity demands among most participants. The right upper limb was the most affected side, followed by the left and both sides. This finding may be related to hand dominance and repetitive use of the dominant hand during work and daily activities. However, involvement of both hands in a substantial proportion of participants suggests that many activities require bilateral hand use, which can significantly affect overall functional performance.

In this study the results showed that among all reported condition CTS was reported most often (26.5%), trigger Finger came next (14.4%), then tennis Elbow (12.6%) and frozen Shoulder (11.7%). These results support earlier research showing that conditions like CTS, tendinopathies and epicondylitis are very common in hand therapy and orthopedic care (Huisstede et al., 2006). Nearly all participants in this study reported pain (97.3%) making it the most common symptom followed by weakness, tingling, numbness, swelling and locking. Pain is widely documented as a primary reason for activity limitation in upper extremity musculoskeletal disorders. Previous studies highlighted that pain significantly reduced ability to grip objects, perform repetitive tasks or sustain forceful hand movements (Amadio, 2005). The high frequency of pain in the current study supports this relationship and suggests that symptom severity directly influences activity limitation. In this study, a significant number of participants reported comorbid conditions such as diabetes mellitus (58.2%) and hypertension (50.7%) being the most common, followed by obesity (22.4%), heart disease (11.9%) and thyroid disorders (7.5%).These findings are consistent with previous studies which shows that comorbid conditions can increase the risk of UEMSDs such as diabetes increases the risk of UEMSDs particularly carpal tunnel

syndrome and trigger finger (Shahrani et al., 2021). Similarly, hypertension has been associated with increased pain and functional limitations in the upper extremity (Ahmed et al., 2023; Shin, 2019). Also, obesity contributes to increasing the risk of musculoskeletal disorders affecting the shoulder, wrist, and hand (Shiri et al., 2006; Walker-Bone & Cooper, 2005).

This study found that all participants experienced different levels of difficulty while performing daily activities. More than half of the respondents (52.7%) reported minimal difficulty while less than half (40.2%) reported moderate difficulty. A small proportion experienced severe difficulty (6.3%) and only one participant (0.9%) was unable to perform activities. None of the participants performed activities without difficulty which showed that UEMSDs strongly affect daily life. These results support previous studies show that UEMSDs affect daily activities like gripping, lifting, writing, cooking, dressing and doing chores. Also, Previous studies reported that conditions like carpal tunnel syndrome, trigger finger, frozen shoulder and epicondylitis commonly reduce functional independence by restricting hand strength, precision and range of motion (Van et al., 2020; Zuckerman & Rokito, 2011). The results of the current study reflect similar limitations across different upper extremity musculoskeletal disorders diagnoses.

The association between sociodemographic factors and activity limitation was examined using non-parametric tests and regression analysis. Gender showed a significant association with activity limitation with females experiencing higher limitations than males. In the regression analysis, although females showed higher activity limitation and the association was not statistically significant which indicating that gender may influence activity limitation. The present study found a significant association between age and activity limitation among individuals with upper extremity

musculoskeletal disorders. Age demonstrated a significant association with activity limitation across different age groups. Regression analysis further showed that participants aged over 60 years had significantly lower activity limitation than the younger reference group (21–40 years) and the 41–60 age group showed lower limitation but was not statistically significant. This finding seems different from earlier studies, which usually show that musculoskeletal problems and functional difficulties increase as people get older (Felipe & McCombie, 2002). The findings of this study show a significant association between area of residence and activity limitation among individuals with upper extremity musculoskeletal disorders. Participants living in semi-urban and rural areas experienced higher levels of activity limitation compared with those living in urban areas. The Kruskal–Walli's test showed a statistically significant difference and regression results further confirmed that both semi-urban and rural participants had greater activity limitation than the reference group urban participants. This study examined several other sociodemographic variables-such as marital status, educational level, monthly family income, number of family members, years of service to find out how they are related to activity limitations in people with upper extremity musculoskeletal disorders. The results showed that none of these variables had a statistically significant association with the level of activity limitation. This finding is similar to previous studies showing that the level of difficulty depends more on symptom severity and the joints involved than on sociodemographic characteristics (Huisstede et al., 2006). Occupation and working hours also showed no significant association. Previous studies have shown that certain jobs especially manual labor or repetitive hand use can increase the risk of developing UEMSDs (Punnett & Wegman, 2004). Moreover, similar findings were reported in a study that even homemakers and office workers experienced comparable hand limitations due to repetitive tasks and pain

(Habib et al., 2012). The study also found no significant association between duration of condition or number of hand therapy sessions and activity limitation. Previous studies suggests that functional improvement depends not only on duration but also on treatment adherence, severity at the onset and presence of comorbidities (Zhang et al., 2002).This means duration alone may not explain how limited a person becomes in their activities. The affected side (left, right or both hands) showed no significant difference in activity limitation. This finding is supported by studies indicating that many daily activities require bilateral coordination (e.g., cooking, dressing, grooming) which means impairment in even one hand can affect overall performance (Makkouk et al., 2008).

CHAPTER VI: CONCLUSION

6.1 Strengths and Limitations

6.1.1 Strengths

- To the best of student researcher's knowledge, there is no study available that sheds light on Activity Limitations in Individuals with Upper Extremity Musculoskeletal Disorders in Bangladesh.
- Face-to-face data collection was used which helped maintain high data accuracy and minimize potential biases.
- The study included participants of different ages, jobs and living areas (urban, semi-urban, and rural) giving a wider view of sociodemographic variations.
- Ethical standards were strictly maintained, including informed consent, confidentiality and Institutional Review Board (IRB) approval.
- The study will be useful for establishing preliminary information that can be used to plan further studies.

6.1.2 Limitations

- The data was collected using a self-developed questionnaire rather than a fully standardized or validated assessment tool due to the lack of linguistic validation which may affect the accuracy of the results.
- Although the required sample size was 316, data could be collected from only 112 participants due to time limitations and availability which may limit the general use of the findings.
- The participants were all from a specific rehabilitation center so the findings cannot be generalized.

6.2 Practice Implication

6.2.1 Recommendation for future practice

Based on the findings of this study, several recommendations can be made for future practice-

- Personalized rehabilitation programs should be developed based on the patient's age, occupation, lifestyle and living environment.
- Community-based rehabilitation services should be expanded to reach semi-urban and rural populations where activity limitation was found to be higher.
- Awareness campaigns should be strengthened in communities and workplaces to promote early recognition of symptoms and encourage timely treatment.
- Multidisciplinary collaboration among occupational therapists, physiotherapists, orthopedic specialists and ergonomists should be promoted to ensure comprehensive care.

6.2.2 Recommendation for future research

- Conduct studies using larger and more representative sample sizes to increase generalizability across the Bangladeshi population.
- Future research should use standardized and validated assessment tools to improve measurement reliability of activity limitations.
- Longitudinal studies are needed to explore the long-term changes in activity limitations after therapy.
- Future studies should include qualitative research methods, such as interviews or focus groups to gain deeper insights about activity limitations.

6.3 Conclusion

This study explored the levels of activity limitations among individuals diagnosed with upper extremity musculoskeletal disorders. The findings revealed that every participant experienced difficulty while performing daily activities, demonstrating the significant impact of UEMSDs on functional independence. More than half of the participants reported minimal difficulty while a considerable proportion experienced moderate difficulty and a small percentage faced severe limitations. The study also found that gender, age and area of residence showed significant associations with activity limitations. Pain was the most common symptom, and it played a major role in limiting hand and upper limb functions. Even though the study had a smaller sample size, it provides important initial information for the Bangladeshi context.

Overall, the daily challenges faced by individuals with upper extremity musculoskeletal disorders are influenced not only by their physical symptoms but also by their environment, occupations and access to care. Strengthening rehabilitation services, promoting ergonomic awareness and improving access to hand therapy across all communities can help individuals maintain independence and participate more fully in their daily lives.

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APPENDICES

Appendix A: Approval / Permission Letter

IRB Approval Letter

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

Ref: CRP-BHPI/IRB/07/2025/1106 Date: 21.07.2025

To
Israt Jahan Ela
4th Year, B.Sc. in Occupational Therapy
Session: 2020-21, Student ID: **122200439**
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal **"Activity Limitations in Individuals with Upper Extremity Musculoskeletal Disorders: A Cross-Sectional Study"** by ethics committee.

Dear Israt Jahan Ela,
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above mentioned dissertation, with yourself, as the principal investigator and Khadija Akter Lily, Lecturer, Department of Occupational Therapy, Bangladesh Health Professions Institute (BHPI), CRP as thesis supervisor. The Following documents have been reviewed and approved:

SL No.	Name of the Documents
1	Research Proposal
2	Self - Developed Questionnaire (English & Bangla)
3	Information sheet & consent form

The purpose of the study is to determine to identify the activity limitations in individuals with upper extremity musculoskeletal disorders. The study involves use of Self-Developed questionnaire to identify the activity limitations in individuals with upper extremity musculoskeletal disorders that may take 20 to 30 minutes to fill in the questionnaire and there is no likelihood of any harm to the participants. There is no benefit to the participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 8:30 AM on 17 June, 2025 at BHPI (50th IRB Meeting).

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

Best regards,

Muhammad Millat Hossain
Associate Professor, Project and Course Coordinator, MRS
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ। ফোন: +৮৮ ০২ ২২৪৪৪৫৪৬৪-৫, +৮৮ ০২ ২২৪৪৪১৪০৪, মোবাইল: +৮৮ ০১৭৩০ ০৫৯৬৪৭
CRP-Chapain, Savar, Dhaka-1343, Bangladesh. Tel: +88 02 224445464-5, +88 02 224441404, Mobile: +88 01730059647
E-mail : principal-bhpi@crp-bangladesh.org, Web: bhpi.edu.bd

Permission Letter from the Head of Occupational Therapy Department of CRP, Savar

বাংলাদেশ হেলথ্ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)
CRP, Chapain, Savar, Dhaka-1343 Tel: 02-7745464-5, 7741404, Fax: 02-7745069

Date: 02/08/2025
To
The Head of the Occupational Therapy Department
Centre for the Rehabilitation of the Paralyesd
CRP- Chapain, Savar, Dhaka-1343, Bangladesh

Subject: Regarding permission for data collection for the research project.

Sir,

With due respect I would like to draw your kind attention that I am a 4th year student of B.Sc. in Occupational Therapy at Bangladesh Health Professions Institute (BHPI). I have to submit a research paper to the University of Dhaka in partial fulfillment of the degree of Bachelor of Science in Occupational Therapy. The research title is **"Activity Limitations in Individuals with Upper Extremity Musculoskeletal Disorders: A Cross-Sectional Study"** with myself, as the principal Investigator and Khadija Akter Lily as my thesis supervisor. The purpose of the study is to identify the activity limitations in individuals with upper extremity musculoskeletal disorder. This study involves use of a Self-developed Questionnaire to find out the activity limitations in individuals with upper extremity musculoskeletal disorder that may take 20 to 30 minutes to answer the Questionnaire and there is no likelihood of harm to the participants and no economic benefits for the participants. Now I am looking for your kind approval to start my data collection from the **Hand Therapy Unit, CRP-Savar**, I assure you that anything in my project will not be harmful to the participants and any data collected will be kept confidential.

So, I look forward to having your permission to start data collection to conduct a successful study as a part of my course.

Sincerely yours,
Israt Jahan Ela
.....
Israt Jahan Ela
4th Year, B.Sc. in Occupational Therapy
Session: 2020-21; Student ID: **122200439**
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Approved
07/08/2025
MD. TAUHIDUL ISLAM
Consultant-OT & Head
Occupational Therapy Dept.
CRP, Savar, Dhaka-1343

Signature of the Head of the department

.....
Prof. Sk. Moniruzzaman
Professor & Head
Department of Occupational Therapy
Bangladesh Health Professions Institute (BHPI)
CRP, Savar, Dhaka-1343

Attachment:

- Copy of IRB Approval Letter

Permission Letter from the Incharge of Occupational Therapy Department of CRP, Mirpur-14

বাংলাদেশ হেলথ্ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)
CRP, Chapain, Savar, Dhaka-1343 Tel: 02-7745464-5, 7741404, Fax: 02-7745069

Date: 02/08/2025
To
The Deputy General Manager
Centre for the Rehabilitation of the Paralyesd
CRP-Mirpur, Plot A/5; Block A, Mirpur 14, Dhaka-1206

Subject: Regarding permission for data collection for the research project.

Sir,

With due respect I would like to draw your kind attention that I am a 4th year student of B.Sc. in Occupational Therapy at Bangladesh Health Professions Institute (BHPI). I have to submit a research paper to the University of Dhaka in partial fulfillment of the degree of Bachelor of Science in Occupational Therapy. The research title is **"Activity Limitations in Individuals with Upper Extremity Musculoskeletal Disorders: A Cross-Sectional Study"** with myself, as the principal Investigator and Khadija Akter Lily as my thesis supervisor. The purpose of the study is to identify the activity limitations in individuals with upper extremity musculoskeletal disorder. This study involves use of a Self-developed Questionnaire to find out the activity limitations in individuals with upper extremity musculoskeletal disorder that may take 20 to 30 minutes to answer the Questionnaire and there is no likelihood of harm to the participants and no economic benefits for the participants. Now I am looking for your kind approval to start my data collection from the **Hand Therapy Unit, CRP-Mirpur**, I assure you that anything in my project will not be harmful to the participants and any data collected will be kept confidential.

So, I look forward to having your permission to start data collection to conduct a successful study as a part of my course.

Sincerely yours,
Israt Jahan Ela
Israt Jahan Ela
4th Year, B.Sc. in Occupational Therapy
Session: 2020-21; Student ID: **122200439**
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Signature of the Head of the department

Prof. Sk. Moniruzzaman
Professor & Head
Department of Occupational Therapy
Bangladesh Health Professions Institute (BHPI)
CRP, Savar, Dhaka-1343

Attachment:

- Copy of IRB Approval Letter

Attn: In-charge - Hand Therapy Unit
Please allow the student to collect data from your unit.
Mousheda 17.08.25
Sanctioned
1282
23.08.25

Appendix B: Information Sheet, Consent Form & Withdrawal Form

Information sheet, Consent form and Withdrawal form [English Version]

Information Sheet/ Participant Explanatory Statement

Research title: Activity Limitations among Individuals with Upper Extremity Musculoskeletal Disorders: A Cross-Sectional Study.

Name of the researcher:

Israt Jahan Ela

4th year, B.Sc in Occupational Therapy

Session: 2020-2021

Bangladesh Health Professions Institute (BHPI),

Centre for the Professionals of the Paralysed (CRP)

CRP-Chapain, Savar, Dhaka-1343.

Supervisor:

Khadiza Akter Lily

Lecturer,Department of Occupational Therapy (BHPI)

Centre for the Professionals of the Paralysed (CRP)

CRP-Chapain, Savar, Dhaka-1343.

Place of research: The study will be conducted in The Centre for the Rehabilitation of the Paralysed(CRP).

Introduction:

I am Israt Jahan Ela 4th year student (Session: 2020-2021) of B.Sc in Occupational Therapy at Bangladesh Health Professions Institute (BHPI), the academic institute of the Centre for the Rehabilitation of the Paralysed (CRP) which is under the Medicine faculty of Dhaka University. As a part of course curriculum, I must conduct a research project in this 4th year. This research project will be conducted under the supervision of Khadija Akter Lily, Lecturer, Department of Occupational Therapy (BHPI), Centre for the Professionals of the Paralysed (CRP). With this information sheet researcher will provide detailed information about the study purpose, data collection process, ethical issues. If you are willing to participate in this research, then clear information about the study will be easier for you in decision making. Please take time to read the information given. If you face any problem understanding after reading, you can ask.

Background and aim of the research:

You are invited to participate in this research because Your participation is valued because firstly, you are attending in CRP and medically diagnosed with upper limb musculoskeletal condition. This study focuses on activity limitations in individuals with upper extremity musculoskeletal disorders. Your insights and experiences will provide valuable information that can help to meet this study's goals. Your involvement is entirely voluntary and greatly appreciated.

Research related information:

The research related information will be discussed with you throughout the information sheet before taking your signature on the consent form. After that, you will attend a face-to-face interview. In which your sociodemographic information (for example - age, gender, occupation) and the types of activity limitations during their daily tasks

will be discussed. The recorded information will be kept confidential, and your identity will not be revealed anywhere.

Voluntary Participation:

Your participation in this study is entirely voluntary. You may withdraw from the study within 2 weeks from the day of interview without any penalty or loss of benefits.

Risk and benefit:

It will be expecting that there will be no risks associated with participating in this study. If some questions are sensitive or emotional, you may choose not to answer and that is also okay. While there are no direct benefits to you, your participation will help in assessing the patient's activity limitations among upper extremity musculoskeletal disorders patient.

Confidentiality:

All information collected in this study will be kept confidential. Your identity will not be revealed in any reports or publications resulting from this study. Data will be stored securely and only accessible to the research team.

How to contact:

If you have any questions about this study, please feel free to contact the researcher Israt Jahan Ela, B.Sc in Occupational Therapy, by using this email: isratjahanela24ot@gmail.com, contact number:01916634843

Information about withdrawal from participation:

Despite your consent, you can withdraw your participation within 2 weeks from the day of interview without giving any explanation to the researcher.

Complaints:

If there are any complaints about the conduct of this research project, contact the Association of Ethics. This proposal will be reviewed by Institutional Review Board (IBR), Bangladesh Health Professions Institute (BHPI), CRP, Savar, Dhaka-1343, Bangladesh, which is a committee whose task it is to make sure that research participants are protected from harm. If you wish to find about more about the IRB, contact Bangladesh Health Professions Institute (BHPI), CRP, Savar, Dhaka- 1343, Bangladesh.

Consent Form

This research is a part of the Occupational Therapy course and the researcher's name is Israt Jahan Ela. I am a student of 4th year B.Sc. in Occupational Therapy in Bangladesh Health Professions Institute (BHPI), the academic institute of Centre for the Rehabilitation of Paralysed (CRP) which is affiliated to University of Dhaka. The study is entitled "Activity Limitations among Individuals with Upper Extremity Musculoskeletal Disorders: A Cross-Sectional Study".

In this study, I am …… a participant and I have been clearly informed about the purpose and aim of the study. I have the right to refuse to take part at any time at any stage of the study. I will not be bound to answer anybody. There will be no impact on my personal life at present and future. I am also confirmed that all the information collected from the interview will be only used for study purpose and would be kept safety and confidentiality will be maintained. My name and address will not be published anywhere. Only the researcher and supervisor will be eligible to access the information to publish the research result. I have been informed about the above-mentioned and I am willing to participate in their study.

_____ **Signature / Fingerprint of the participant**	_____ **Date**
_____ **Signature of the Researcher**	_____ **Date**

Withdrawal form

Research Title: Activity Limitations among Individuals with Upper Extremity Musculoskeletal Disorders: A Cross-Sectional Study

Researcher's Name: Israt Jahan Ela, 4th year, Occupational Therapy.

I, ...(Participant's Name) wish to withdraw from participating myself as a participant in this study.

Reason for withdrawing:

.....

Name of the participant: .....

Date: .....

Signature of the participant: .....

Date: .....

Name of the researcher: .....

Date: .....

Information sheet, consent form and withdrawal form [Bangla Version]

অংশগ্রহণকারীর জন্য তথ্যপত্র / ব্যাখ্যামূলক বিবৃতি

গবেষণার শিরোনাম: উপরের অঙ্গের মাস্কুলোস্কেলেটাল রোগে আক্রান্ত ব্যক্তিদের কার্যকলাপের সীমাবদ্ধতা: একটি ক্রস-সেকশনাল গবেষণা

গবেষক:

ইসরাত জাহান ইলা,৪র্থ বর্ষ, বি.এসসি ইন অকুপেশনাল থেরাপি,সেশন: ২০২০-২০২১, বাংলাদেশ হেলথ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই),সেন্টার ফর দ্য রিহ্যাবিলিটেশন অফ দ্য প্যারালাইজড (সিআরপি),সিআরপি-চাপন, সাভার, ঢাকা-১৩৪৩।

তত্ত্বাবধায়ক:

খাদিজা আক্তার লিলি, প্রভাষক, অকুপেশনাল থেরাপি বিভাগ (বিএইচপিআই),সেন্টার ফর দ্য রিহ্যাবিলিটেশন অফ দ্য প্যারালাইজড (সিআরপি),সিআরপি-চাপন, সাভার, ঢাকা-১৩৪৩।

গবেষণার স্থান:

গবেষণাটি সেন্টার ফর দ্য রিহ্যাবিলিটেশন অফ দ্য প্যারালাইজড (সিআরপি)-তে পরিচালিত হবে।

ভূমিকা:

আমি ইসরাত জাহান ইলা, বিএসসি ইন অকুপেশনাল থেরাপির ৪র্থ বর্ষের (সেশন: ২০২০-২০২১) শিক্ষার্থী। আমি বাংলাদেশ হেলথ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)-এ অধ্যয়নরত, যা সেন্টার ফর দ্য রিহ্যাবিলিটেশন অফ দ্য প্যারালাইজড (সিআরপি)-এর একাডেমিক প্রতিষ্ঠান এবং ঢাকা বিশ্ববিদ্যালয়ের মেডিসিন অনুষদের অধীনে পরিচালিত। পাঠ্যক্রমের অংশ হিসাবে, আমাকে এই ৪র্থ বছরে একটি গবেষণা প্রকল্প পরিচালনা করতে হবে । এই গবেষণা প্রকল্পটি আমার তত্ত্বাবধায়ক খাদিজা আক্তার লিলি, প্রভাষক, অকুপেশনাল থেরাপি বিভাগ, বিএইচপিআই-এর তত্ত্বাবধানে পরিচালিত হবে।

এই তথ্যপত্রের মাধ্যমে আমি গবেষণার উদ্দেশ্য, তথ্য সংগ্রহের প্রক্রিয়া ও নৈতিক বিষয়গুলো বিস্তারিতভাবে তুলে ধরব। যদি আপনি গবেষণায় অংশগ্রহণে সম্মত হন, তবে সিদ্ধান্ত নেওয়ার জন্য আপনার কাছে স্পষ্ট ধারণা থাকবে। অনুগ্রহ করে মনোযোগ দিয়ে পড়ুন। বুঝতে কোনো অসুবিধা হলে আপনি প্রশ্ন করতে পারবেন।

গবেষণার পটভূমি ও উদ্দেশ্য:

আপনাকে এই গবেষণায় অংশগ্রহণের জন্য আমন্ত্রণ জানানো হচ্ছে কারণ আপনি বর্তমানে সিআরপিতে চিকিৎসা নিচ্ছেন এবং উপরের অঙ্গের মাস্কুলোস্কেলেটাল (মাংসপেশী-হাড়জনিত)সমস্যায় নির্ণীত

হয়েছেন। এই গবেষণার মূল লক্ষ্য হলো এমন রোগীদের দৈনন্দিন কার্যকলাপে কী ধরনের সীমাবদ্ধতা দেখা দেয় তা সনাক্ত করা। আপনার অভিজ্ঞতা ও মতামত এই গবেষণার জন্য মূল্যবান তথ্য প্রদান করবে। আপনার অংশগ্রহণ সম্পূর্ণ স্বেচ্ছামূলক এবং অত্যন্ত প্রশংসনীয়।

গবেষণা-সংক্রান্ত তথ্য:

গবেষণার বিস্তারিত তথ্য আপনাকে এই তথ্যপত্রের মাধ্যমে জানানো হবে এবং পরে সম্মতিসূচক ফর্মে স্বাক্ষর নেওয়া হবে। এরপর আপনার সাথে সরাসরি সাক্ষাৎকার নেওয়া হবে। সেখানে আপনার সামাজিক-জনতাত্ত্বিক তথ্য (যেমন: বয়স, লিঙ্গ, পেশা) এবং দৈনন্দিন কাজকর্মে সীমাবদ্ধতা সম্পর্কে আলোচনা করা হবে। সংগৃহীত তথ্য গোপন রাখা হবে এবং কোনো প্রকাশনায় আপনার পরিচয় প্রকাশ করা হবে না।

স্বেচ্ছামূলক অংশগ্রহণ:

এই গবেষণায় আপনার অংশগ্রহণ সম্পূর্ণ স্বেচ্ছামূলক। আপনি চাইলে সাক্ষাৎকারের তারিখ থেকে দুই সপ্তাহের মধ্যে গবেষণা থেকে সরে আসতে পারবেন, এতে কোনো প্রকার অসুবিধা বা ক্ষতির সম্মুখীন হতে হবে না।

ঝুঁকি ও সুফল:

এই গবেষণায় অংশগ্রহণে কোনো ঝুঁকি থাকবে না বলে আশা করা হচ্ছে। কোনো প্রশ্ন সংবেদনশীল বা মানসিকভাবে অস্বস্তিকর মনে হলে আপনি উত্তর না দেওয়ার অধিকার রাখেন। যদিও এতে আপনার প্রত্যক্ষ কোনো উপকার হবে না, তবে আপনার অংশগ্রহণ উপরের অঙ্গসংক্রান্ত মাস্কুলোস্কেলেটাল (মাংসপেশী-হাড়জনিত)সমস্যায় আক্রান্ত রোগীদের কার্যকলাপ সীমাবদ্ধতা চিহ্নিত করতে সহায়ক হবে।

গোপনীয়তা:

এই গবেষণার সকল তথ্য গোপন রাখা হবে। কোনো প্রতিবেদন বা প্রকাশনায় আপনার নাম বা পরিচয় প্রকাশ করা হবে না। সংগৃহীত তথ্য নিরাপদে সংরক্ষিত থাকবে এবং কেবল গবেষণা দলই এ তথ্য ব্যবহার করতে পারবে।

যোগাযোগের উপায়:

গবেষণা সম্পর্কে কোনো প্রশ্ন থাকলে গবেষক ইসরাত জাহান ইলার সাথে যোগাযোগ করতে পারেন।

ইমেইল: isratjahanela24ot@gmail.com

মোবাইল: ০১৯১৬৬৩৪৮৪৩

গবেষণা থেকে সরে আসা সংক্রান্ত তথ্য:

আপনি সম্মতি দেওয়ার পরও সাক্ষাৎকারের তারিখ থেকে দুই সপ্তাহের মধ্যে গবেষণা থেকে সরে আসতে পারবেন। এ জন্য কোনো কারণ ব্যাখ্যা করার প্রয়োজন নেই।

অভিযোগ:

যদি এই গবেষণা প্রকল্পের পরিচালনা সম্পর্কে কোনো অভিযোগ থাকলে, অ্যাসোসিয়েশন অফ এথিক্সের সাথে যোগাযোগ করুন।

সম্মতিপত্র

আমি ইসরাত জাহান ইলা, বর্তমানে ঢাকা বিশ্ববিদ্যালয়ের চিকিৎসা অনুষদভূক্ত সি.আর.পির অধীনস্থ বাংলাদেশ হেলথ্ প্রফেশন্স ইন্সটিটিউট (বি.এইচ.পি.আই)-এ বি.এস.সি ইন অকুপেশনাল থেরাপি বিভাগে ৪র্থ বর্ষে অধ্যায়নরত। আমার গবেষণার শিরোনাম - "উপরের অঙ্গের মাস্কুলোস্কেলেটাল রোগে আক্রান্ত ব্যক্তিদের কার্যকলাপের সীমাবদ্ধতা: একটি ক্রস-সেকশনাল গবেষণা" ।

এই গবেষণাতে আমি _____ একজন অংশগ্রহণকারী এবং পরিষ্কারভাবে এই গবেষণার উদ্দেশ্য সম্পর্কে অবগত।আমার যেকোনো সময়ে এই গবেষণা থেকে নিজেকে প্রত্যাহার করার অধিকার আছে।এই জন্য আমি প্রশ্নের উওর প্রদান করার জন্য কারো কাছে দায়বদ্ধ না।এই গবেষণাটি বর্তমানে এবং ভবিষ্যতে আমার চিকিৎসাক্ষেত্রে কোনোরকম প্রভাব ফেলবে না।

আমি আরও অবগত আছি যে,এই কথোপকথন থেকে নেওয়া সমস্ত তথ্য নিরাপদে এবং গোপনে শুধুমাত্র গবেষণার কাজেই ব্যবহার করা হবে। আমার নাম এবং ঠিকানা কোথাও প্রকাশ করা হবে না।শুধুমাত্র গবেষণাকারীর এবং তার সমন্বয়কারীর সাথে এই গবেষণার পদ্ধতি সম্পর্কে অথবা যে কোনো প্রশ্নের উওর জানার জন্য কথা বলতে পারবে।আমি উপরোক্ত তথ্যগুলো ভালোমতো জেনে নিজ ইচ্ছায় এই গবেষণায় অংশগ্রহন করছি ।

অংশগ্রহণকারীর স্বাক্ষর /টিপসই:	**তারিখ:**
গবেষকের স্বাক্ষর:	**তারিখ:**

প্রত্যাহার পত্র

(শুধুমাত্র স্বেচ্ছায় প্রত্যাহারের জন্য প্রযোজ্য)

গবেষণার শিরোনাম: উপরের অঙ্গের মাস্কুলোস্কেলেটাল রোগে আক্রান্ত ব্যক্তিদের কার্যকলাপের সীমাবদ্ধতা: একটি ক্রস-সেকশনাল গবেষণা ।

গবেষক: ইসরাত জাহান ইলা,৪র্থ বর্ষ, অকুপেশনাল থেরাপি বিভাগ।

আমি _____ (অংশগ্রহণকারীর নাম) এই গবেষণায় একজন অংশগ্রহণকারী হিসেবে নিজেকে অংশগ্রহন করা থেকে প্রত্যাহার করতে চাই।

প্রত্যাহারের কারণ:

_____

অংশগ্রহণকারীর নাম: _____

তারিখ: _____

অংশগ্রহণকারীর স্বাক্ষর: _____

তারিখ: _____

Appendix C: Questionnaire

Questionnaire (English version)

SL No: _____ **Date: _____**

Patient's Information	
ID Number	
Name	
Contact No	

Section A: Sociodemographic Information		
Q No	**Question**	**Answer**
1	Age	years
2	Gender	[1] Male [2] Female [3] Others
3	Marital Status	[1] Married [2] Unmarried [3] Separated [4] Divorced [5] Widow
4	Area of residence	[1] Urban [2] Semi-urban [3] Rural
5	Educational level	[1] No formal education [2] Primary [3] Secondary [4] Higher Secondary [5] Graduate and above
6	Current Occupation	[1] Housewife [2] Office worker [3] Student [4] Business [5] Health worker [6] Teacher [7] Manual laborer [8] Garment's worker [9] Freelancer [10] Unemployed [11] Others: _____
7	Years of service in current occupation	
8	Working Hour	
9	Number of family member	
10	Monthly family income	
11	Primary earner	[1] Yes [2] No
12	Comorbid Condition	[1] Diabetic Mellitus [2] Hypertension

		[3] Heart disease [4] Thyroid disease [5] Chronic kidney disease [6] Obesity [7] Others: _____ [8] Not applicable
13	Diagnosis	
14	Dominant side	[1] Left [2] Right
15	Duration of Condition	
16	Symptom	[1] Pain [2] Tingling [3] Numbness [4] Weakness [5] Stiffness [6] Swelling [7] Tenderness [8] locking [9] Others: _____
17	Hand Therapy Sessions Received	

Section B: Activity Related Information		
Q No	**Question**	**Answer**
18	Lifting light or small objects.	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
19	Reaching overhead (e.g., take something from a shelf)	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the Activity
20	Pulling or pushing a door	[1] Performs without difficulty [2] Performs with minimal difficulty

		[3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
21	Unlocking a door or drawer using a key	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
22	Reaching behind your back	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
23	Dressing yourself (including putting on over the head)	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
24	Tying shoelaces or buttoning clothes	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
25	Drying or combing hair	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe

		difficulty [5] Unable to perform the activity
26	Cooking activities (e.g., cutting,peeling,lifting pans)	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
27	Opening a new water bottle or jar	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
28	Carrying a grocery bag during shopping	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
29	Cleaning tasks (e.g., sweeping,wiping,scrubbing)	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
30	Twisting and hanging wet clothes	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity

31	Changing bed sheets or folding clothes	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
32	Performing job-related responsibilities (e.g., typing, using machine)	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
33	Using smartphone for communication	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
34	Writing with a pen or pencil	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
35	Driving (e.g., motorcycle, bicycle) or travelling on public transport (e.g., bus, rickshaw)	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
36	Participating in religious activities requiring hand use (e.g., wudu, prayer)	[1] Performs without difficulty [2] Performs with minimal difficulty

		[3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
37	Participating in leisure (e.g., gardening) or sports activities (e.g., throwing a ball)	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity
38	Performing sleep-related tasks (e.g., turning in bed, or maintaining sleep)	[1] Performs without difficulty [2] Performs with minimal difficulty [3] Performs with moderate difficulty [4] Performs with severe difficulty [5] Unable to perform the activity

Questionnaire (Bangla version)

ক্রমিক নং _____ **তারিখ _____**

রোগীর পরিচয়	
সনাক্তকরণ নম্বর	
নাম	
যোগাযোগ নম্বর	

বিভাগ ক: সামাজিক জনতাত্ত্বিক তথ্য		
প্রশ্ন নং	**প্রশ্ন**	**উত্তর**
১	বয়স	বছর
২	লিঙ্গ	[১] পুরুষ [২] মহিলা [৩] অন্যান্য
৩	বৈবাহিক অবস্থা	[১] বিবাহিত [২] অবিবাহিত [৩] বিচ্ছেদ [৪] তালাকপ্রাপ্ত [৫] বিধবা
৪	বসবাসের এলাকা	[১] শহর [২] উপশহর [৩] গ্রাম
৫	শিক্ষাগত যোগ্যতা	[১] নিরক্ষর [২] প্রাথমিক [৩] মাধ্যমিক [৪] উচ্চমাধ্যমিক [৫] স্নাতক এবং তদূর্ধ্ব
৬	বর্তমান পেশা	[১] গৃহিনী [২] অফিসকর্মী [৩] ছাত্র [৪] ব্যবসায়ী [৫] স্বাস্থ্যকর্মী [৬] শিক্ষক [৭] কায়িকশ্রমিক

		[৮] গার্মেন্টসকর্মী [৯] ফ্রিলান্সার [১০] বেকার [১১] অন্যান্য : (উল্লেখ করুন _____)
৭	বর্তমান পেশায় স্থায়িত্বকাল	
৮	কর্মসময়	
৯	পরিবারের সদস্য সংখ্যা	
১০	মাসিক আয়	
১১	প্রধান উপার্জনকারী	[1] হ্যা [2] না
১২	সহাবস্থানকারী রোগ	[১] ডায়াবেটিস মেলিটাস [২] উচ্চ রক্তচাপ [৩] হৃদরোগ [৪] থাইরয়েড রোগ [৫] দীর্ঘস্থায়ী কিডনি রোগ [৬] স্থূলতা [৭] অন্যান্য: _____ [৮] অনুপস্থিত
১৩	রোগ নির্ণয়	
১৪	আক্রান্ত হাত	[1] বাম [2] ডান
১৫	সমস্যার স্থায়িত্বকাল	
১৬	লক্ষণসমূহ	[১] ব্যাথা [২] সুচ ফুটার মতো অনুভূতি [৩] অনুভূতি হ্রাস [৪] দুর্বলতা [৫] জয়েন্ট শক্ততা [৬] ফোলা [৭] স্পর্শকাতরতা [৮] ক্লিকিং /আটকে যাওয়া [৯] অন্যান্য: _____
১৭	হ্যান্ড থেরাপি সেশন গ্রহণের সংখ্যা	

বিভাগ খ: কার্যকলাপ সম্পর্কিত তথ্য		
প্রশ্ন নং	**প্রশ্ন**	**উত্তর**
১৮	হালকা বা ছোট জিনিস তোলা	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
১৯	মাথার উপরে হাত পৌঁছানো (যেমন: তাক থেকে কিছু নেওয়া)	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২০	দরজা টানা বা ধাক্কা দেওয়া	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২১	চাবি দিয়ে দরজা বা ড্রয়ার খোলা	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২২	পিছনে হাত পৌঁছানো	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২৩	নিজে পোশাক পরিধান করা (মাথার উপর দিয়ে পরিধান করা পোশাকসহ)	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা

		[৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২৪	জুতার ফিতা বাঁধা বা পোশাকের বোতাম লাগানো	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২৫	চুল শুকানো বা আঁচড়ানো	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২৬	রান্নার কাজ করা (যেমন কাটা, খোসা ছাড়ানো, হাঁড়ি তোলা)	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২৭	নতুন পানির বোতল বা বয়াম খোলা	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২৮	কেনাকাটার সময় বাজারের ব্যাগ বহন করা	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
২৯	পরিষ্কারের কাজ করা (যেমন ঝাড়ু দেওয়া, মুছা, ঘষা)	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম

৩০	ভেজা কাপড় মোচড়ানো এবং শুকাতে দেওয়া	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
৩১	বিছানার চাদর পরিবর্তন বা কাপড় ভাঁজ করা	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
৩২	পেশাগত দায়িত্ব সম্পন্ন করা (যেমন টাইপ করা, যন্ত্র ব্যবহার করা)	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
৩৩	মোবাইল ফোন ব্যবহার করে যোগাযোগ করা	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
৩৪	কলম বা পেন্সিল দিয়ে লেখা	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
৩৫	যানবাহন চালানো (যেমন মোটরসাইকেল,সাইকেল)বা পাবলিক ট্রান্সপোর্টে ভ্রমণ করা (যেমন বাস, রিকশা)	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
৩৬	ধর্মীয় কার্যক্রমে অংশগ্রহণ করা যেখানে হাত ব্যবহারের প্রয়োজন হয় (যেমন ওজু, নামাজ)	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা

		[৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
৩৭	বিনোদনমূলক (যেমন বাগান করা) বা খেলাধুলা (যেমন বল ছোড়া) কার্যক্রমে অংশগ্রহণ করা	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম
৩৮	ঘুম সম্পর্কিত কার্যসমূহ (যেমন: বিছানায় পাশ পরিব্রত্ন করা, ঘুম বজায় রাখা)	[১] কোনো অসুবিধা নেই [২] সামান্য অসুবিধা [৩] মাঝারি মাত্রার অসুবিধা [৪] গুরুতর অসুবিধা [৫] সম্পূর্ণভাবে করতে অক্ষম

Appendix D: Supervision Contact Schedule

Bangladesh Health Professions Institute
Department of Occupational Therapy
4th Year B. Sc in Occupational Therapy
OT 401 Research Project

Thesis Supervisor- Student Contact; face to face or electronic and guidance record

Title of thesis: Activity Limitations in Individuals with Upper Extremity Musculoskeletal Disorders: A cross-sectional Study.

Name of student: Israt Jahan Ela

Name and designation of thesis supervisor: Khadija Akter Lily
Lecturer,
Department of Occupational Therapy, BHPI, CRP.

Appointment No	Date	Place	Topic of discussion	Duration (Minutes/ Hours)	Comments of student	Student's signature	Thesis supervisor signature
1	26.5.25	Library Building	Discussion about the research title, aim, objective	2 hours	Effective discussion about research.	Ela	
2	28.5.25	BHPI building	Clearance of title, aim, objective and related discussion	2 hours	Helpful and informative discussion	Ela	
3	29.5.25	BHPI building	Proposal presentation guideline	2hours	Constructive guideline about proposal.	Ela	

4	31.5.25	BHPI building	Proposal Presentation Feedback.	2hours	Appreciated and focused discussion.	Ela	
5	7.6.25	BHPI building	Discussion about self-developed question and methodology	2hours	Got clean idea and feedback.	Ela	
6	9.6.25	BHPI building	Feedback on self-developed questionnens it's translation	2hours	Helpful discussion.	Ela	
7	18.6.25	BHPI building	Feedback on consent form withdrawl form and information consent	2hours	Need some connections.	Ela	
8	21.6.25	BHPI building	Discussion and guidelines about data collection& Permission letter	2hours	Effective feedback	Ela	
9	23.6.25	BHPI building	Discussion about the field test	1 hour 30minutes	Helpful discussion.	Ela	
10	18.8.25	Library building	Methodology, literature reviews& background submitted discussion	3hours	Helpful and focused discussion.	Ela	
11	15.12.25	BHPI building	Discussion about data analysis, result & discussion	1hour 30minutes	Constructive and effective discussion	Ela	
12	21.12.25	BHPI building	Feedback on data analysis	2hours	Informative discussion.	Ela	
13	27.12.25	BHPI building	Feedback on result and discussion.	2hours	Informative and effective discussion	Ela	
14	3.1.26	BHPI building	Feedback about 1st draft Submission and discussion.	3hours	Helpful for the thesis.	Ela	

15	5.1.26	BHPI building	Discussion about abstract write-up and formating.	2hours	Informative discussion.	Ela	
16	7.1.26	BHPI building	Analysis related discussion and feedback overall.	3hours	Helpful and cons-tructive discussion.	Ela	
17	11.1.26	BHPI building	Feedback on result and discussion write up	3hours	Helpful & effective guideline.	Ela	
18	14.1.26	BHPI building	Overall guideline for 2nd draft submission and Defence Presentation.	3hours	Effective feedback	Ela.	
19							
20							

Note:

1. Appointment number will cover at least a total of 40 hours; applicable only for face to face contact with the supervisors.
2. Students will require submitting this completed record during submission your final thesis.