



Faculty of Medicine

**University of Dhaka**

**TRANSLATION AND VALIDATION OF  
STarT BACK SCREENING TOOL FOR LOW BACK PAIN AND  
MUSCULOSKELETAL HEALTH QUESTIONNAIRE(MSK-HQ)  
FOR MUSCULOSKELETAL DISORDERS**

Faiza Bahauddin

Bachelor of Science in Physiotherapy (B.Sc. PT)

Roll No-144

Reg. No. – 1776

BHPI, CRP, Savar, Dhaka



**Bangladesh Health Professions Institute (BHPI)**

Department of Physiotherapy

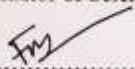
CRP, Savar, Dhaka

October,2019

We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for acceptance of this dissertation entitled

**TRANSLATION AND VALIDATION OF STarT BACK SCREENING TOOL  
FOR LOW BACK PAIN AND MUSCULOSKELETAL HEALTH  
QUESTIONNAIRE (MSK-HQ) FOR MUSCULOSKELETAL DISORDERS**

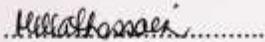
Submitted by **Faiza Bahauddin**, for partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (B. Sc. PT).



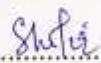
.....  
**Firoz Ahmed Mamin**  
Associate Professor  
Department of Rehabilitation Science  
Course Coordinator  
M.Sc. in Physiotherapy Program  
BHPI, CRP, Savar, Dhaka.



.....  
**Mohammad Anwar Hossain**  
Associate Professor, Physiotherapy, BHPI  
Senior Consultant & Head of the Department of Physiotherapy  
CRP, Savar, Dhaka



.....  
**Muhammad Millat Hossain**  
Assistant Professor  
Department of Rehabilitation Science  
BHPI, CRP, Savar, Dhaka



.....  
**Md Shofiqul Islam**  
Assistant Professor  
Department of Physiotherapy  
BHPI, CRP, Savar, Dhaka



.....  
**Professor Md Obaidul Haque**  
Head of the Department of Physiotherapy  
Vice Principal  
BHPI, CRP, Savar, Dhaka

**Declaration**

I declare that work presented here is my own. All sources used have been cited appropriately. Any mistake and inaccuracies are my own. I also declare that for my publication, presentation or dissemination of information of the study. I would be bound to take written consent from the Department of Physiotherapy, Bangladesh Health Profession Institute (BHPI).

Signature: *Faiza Bahauddin*

Date: 01.12.19

**Faiza Bahauddin**

**Bachelor of Science in Physiotherapy (B.Sc. PT)**

DU Roll no: 144

Reg no: 1776

BHPI, CRP, Savar, Dhaka

# CONTENTS

## Page No.

Acknowledgement	i
Abbreviations	ii
List of Tables	iii
List of Figures	iv
Abstract	v
<b>CHAPTER- I: INTRODUCTION</b>	<b>1-</b>
1.1 Background	1-3
1.2 Rationale	4
1.3 Objective	5
1.3.1 General objective	5
1.3.2 Specific objective	5
1.4 Operational definition	6
<b>CHAPTER- II: LITERATURE REVIEW</b>	<b>7-14</b>
<b>CHAPTER III: METHODOLOGY</b>	<b>15-19</b>
3.1 Study design	15
3.2 Study area	15
3.3 Study duration	15
3.4 Study population	15

	<b>Page No.</b>
3.5 Sampling technique	16
3.6 Sampling size	16
3.7 Inclusion criteria	17
3.8 Exclusion criteria	17
3.9 Method of data collection	18
3.9 Data analysis	18
3.10 Informed consent	19
3.11 Ethical consideration	19
<b>CHAPTER- IV: RESULTS</b>	<b>20-40</b>
<b>CHAPTER- V: DISCUSSION</b>	<b>41-44</b>
<b>LIMITATION OF THE STUDY</b>	<b>45</b>
<b>CHAPTER – VI: CONCLUSION AND RECOMMENDATION</b>	<b>46-47</b>
6.1 Conclusion	46
6.2 Recommendation	47
<b>REFERENCES</b>	<b>48-56</b>
<b>APPENDIX</b>	<b>57-73</b>

## Acknowledgement

At first, I would like to pay my gratitude to the Almighty Allah for giving me the ability to complete this project in time with success. Secondly, I would like to express my sincere appreciation to my parents and my siblings for being a great support in every aspects of my life.

I am extremely grateful to my honorable supervisor & respected teacher **Firoz Ahmed Mamin**, Associate Professor, Department of Rehabilitation Science, Course Coordinator, M.Sc. in Physiotherapy Program, BHPI, CRP, Savar, for his valuable time, supervision and excellent guidance without his support I could not be able to complete this study.

I would like to thank my honorable teacher Professor **Md Obaidul Haque**, Head of the Department of Physiotherapy, Vice principal, BHPI, CRP, Savar, Dhaka, for recommend me to begin the study procedure and giving me encouragement to conduct the study.

I would like to express my gratitude to **Mohammad Anwar Hossain**, Associate professor, Department of Physiotherapy, BHPI and Head of the Physiotherapy Department, CRP, Chapain, Savar, Dhaka, for giving me the permission of data collection and providing me excellent guidelines.

I would like to express acknowledgement to my respected teacher **Md Shofiqul Islam**, Assistant Professor, Department of Physiotherapy, BHPI, CRP, Savar and **Muhammad Millat Hossain**, Assistant Professor, Department of Rehabilitation Science BHPI, CRP, Savar, and all of my teachers for helping me in this study. I would like to express my gratitude to Mizanur Rahman, Dept of Speech and Language Therapy for sparing his valuable time to help me with the translation process.

I would also like to give my special appreciation to Saleha Fazal , Sakila Rinku, Nishat Tasnim, Tamal Ghosh, Muid Hossain, Farzana Sharmin, for their help to translate my questionnaire. I would also like to thank the Librarian of Bangladesh Health Professions Institute (BHPI) and her associates for their kind support to find out related books, journals and internet accessibility. Finally, I would like to thank to all the participants of the study for their full co-operations.

## Abbreviation

<b>BHPI:</b>	Bangladesh Health Professions Institute.
<b>BMRC:</b>	Medical and Research Council of Bangladesh
<b>CRP:</b>	Centre for The Rehabilitation of The Paralysed.
<b>GBD:</b>	Global Burden of Disease
<b>LBP:</b>	Low Back Pain.
<b>MSD:</b>	Musculoskeletal disorder.
<b>MSK-HQ:</b>	Musculoskeletal Health Questionnaire.
<b>PROMs:</b>	Patient reported outcome measures
<b>SBST:</b>	STarT Back Screening Tool.
<b>IRB:</b>	Institutional Review Board
<b>WHO:</b>	World Health Organization

## List of tables

	<b>Page No.</b>
Table-1: Age range of the participants (MSK-HQ)	24
Table-2: Occupation of the participants (MSK-HQ)	27
Table-3: Causes of pain among the participants (MSK-HQ)	29
Table-4: Musculoskeletal Health Questionnaire (MSK-HQ) related information	30-34
Table-5: Age range of the participants (SBST)	36
Table-6: Occupation of the participants (SBST)	39
Table-7: Causes of pain among the participants (SBST)	41
Table-8: STarT Back Screening Tool (SBST) related information	42-43

## List of figures

	<b>Page No.</b>
Figure-1: Gender ratio of the participants (MSK-HQ)	25
Figure-2: Marital status of the participants (MSK-HQ)	25
Figure-3: Educational background of the participants (MSK-HQ)	26
Figure-4: Monthly income of the participants (MSK-HQ)	26
Figure-5: Co-morbid disease among the participants (MSK-HQ)	28
Figure-6: MSK-HQ Scoring of the participants	35
Figure-7: Gender ratio of the participants (SBST)	37
Figure-8: Marital status of the participants (SBST)	37
Figure-9: Educational background of the participants (SBST)	38
Figure-10: Monthly income of the participants (SBST)	38
Figure-11: Presence of co-morbid diseases among the participants (SBST)	40
Figure-12: Risk level of low back pain participants (SBST)	44

## ABSTRACT

**Purpose:** Translate and validate two questionnaires (STart Back Screening Tool and Musculoskeletal Health Questionnaire) into Bangla language for diagnosing low back pain.

**Objectives:** to translate and validate MSK-HQ and SBST instruments into Bangla among low back pain patients, to adjust Bangla translated version with English translated version.

**Methodology:** Cross cultural adaptation of these questionnaires is done through seven phases where 95 samples were selected for STart Back Screening Tool and 84 samples were selected for Musculoskeletal Health Questionnaire (MSK-HQ) for low back pain condition as convenience sampling from CRP, Savar, Dhaka. Sociodemographic information was also included during data collection procedure. Descriptive statistics were used for data analysis which focused through table and bar chart. **Results:** Most of the patient who were affected by low back pain, their age was between 31-60. Among them through MSK-HQ, almost 68% patients' condition were found to be chronic and through SBST, patients with low back pain can be categorized as low risk- 16.84%, in medium risk- 55.79%, in high risk- 27.37%. **Conclusion:** It can be concluded that by translating and validating both of these questionnaires could bring positive result while diagnosing low back pain.

**Key words:** Translation, validation, low back pain, SBST, MSK-HQ.

**1.1 Background Information:**

Low back pain (LBP) is one of the major causes of disability that is often characterized as non-specific and has numerous contributing factors. It impacts most individuals with prevalent recurring episodes at some stage in their life. It has a major effect on the psychological, social and physical performance of an individual (Alamam et al., 2019). The European Low-back Pain Guidelines state that 90 percent of patients with acute low-back pain recover within six weeks Short-term recovery estimates ranging from 39 to 76 percent (Menezes Costa et al., 2012). Low back pain is not a disease but a symptom. Like other symptoms, it can have many causes, such as headache and dizziness. Non-specific low back pain is the most prevalent type of low back pain. This word is used if the pathoanatomic cause of the pain is not determinable (Maher et al., 2017). A significant issue is why, some patients develop long-term issues while most do not. To decrease long-term issues, early identification of patients at danger of developing constant disabling pain may be useful (Grotle et al., 2007).

In clinical practice, rather than a single clinical disorder, the word 'low back pain' includes a wide range of symptoms and behaviors. This inherently implies that LBP patients are a group, which includes both male and female, that requires distinct treatment strategies despite the availability of a range of efficient medicines (Aebischer et al., 2015). Low back pain without sciatica, stenosis or serious spinal deformity is prevalent, with a reported prevalence point as high as 33 percent and a prevalence of one year as high as 73 percent. The annual incidence of clinically important low back pain with functional disability is roughly 10 to 15% in physically active adults, who are not seeking any medical attention. Acute low back pain (three to six weeks in duration) generally resolves in several weeks, although recurrence is prevalent and low-grade symptoms often occur years after an original episode. Serious or persistent disability is rare even among people with low back pain that lasts longer than three months (Carragee, 2005).

Identifying patients at risk for early development of persistent LBP is of great significance. To detect these patients, it is necessary to know prognostic chronicity factors in order to evaluate these influencing variables and predict the course of LBP, screening tools are required (Melloh et al., 2009).

Musculoskeletal Health Questionnaire (MSK-HQ) is a newly established PROM evaluating musculoskeletal health associated quality of life for use by patients with distinct musculoskeletal problems in a variety of environments, in various form of settings. It has been shown that musculoskeletal MSK-HQ has strong internal consistency between components, as well as good test-retest reliability and convergent validity relative to other musculoskeletal health interventions (Norton et al., 2018).

The STarT Back Screening Tool (SBST) was created for LBP patients, because it is easy, concise, self-administered result survey (Azimi et al., 2014). To predict long-term disability and failure to return to work, some questionnaires have been developed. The STarT Back Screening Tool (SBST) has lately been created and validated to define patient subgroups to guide original primary care decision-making. This instrument is based on the existence of possibly modifiable physical and psychological factors recognized by nine inquiries for persistent, disabled symptoms. If patients score favorably on less than four issues, they are categorized as "low danger" of future disabling LBP. The rest are then split into "medium risk" (weak outcome physical and psychosocial indicators but without elevated psychological factors) and "low risk" (elevated psychological prognostic indicators with or without physical indicators). This instrument has a strong psychometric ability and is smaller than other questionnaires (Bruyere et al., 2012). These groups can be used to support opinions on suitable evidence-based pathways of therapy. For the low-risk group, advice and instruction are suggested, referral for further therapy which focuses on medium-risk groups physical components and referral for multidimensional therapy that targets high-risk group for both physical and psychosocial aspects (Morso et al., 2011). For instance, for some low-risk patients, guidance and easy self-care exercises are given which will be adequate to resolve the problem, while for others who are at high risk may encounter permanent disability, psychological distress which may be linked with depressed mood and activity limitations, affecting recovery. Therefore, a difficult job for clinicians is to

summarize the correct therapy strategy from individual patients when they first consult with them (Aebischer et al., 2015). The initial version of the STarT has been officially converted into Brazilian, Danish, Dutch, French, Japanese, Spanish, Swedish, and Turkish within just 2 years (Luan et al., 2014).

Translation, adaptation and validation of a tool or scale for cross-cultural research requires more time and involves strategic planning and implementation of strict methodological methods in order to derive a credible and valid measure of the target population's notion of concern (Sousa & Rojjanasrirat 2010).

This study focuses on translation and validation of Musculoskeletal Health Questionnaire (MSK-HQ) and STarT Back Screening Tool (SBST) into Bangla language through cross cultural adaptation process.

## **1.2 Rationale**

The experience of pain, which interferes with patient's life can happen due to any illness or disabilities, it varies from one person to another. As the perception of pain changes from one another, so specific measurement tools are needed in order to clarify exactly how much pain they are in and how it is affecting their quality of life and working ability.

The lack of culturally adapted and validated instruments for patients with low back pain and musculoskeletal disorders is a barrier to assessing health and psychosocial problems, evaluating interventions and determining cost-effective program. Physiotherapists can assess patients' condition by using appropriate culturally adapted and validated tool to determine the risk level and chronicity level of a patient and which type of intervention method can be used for treatment purpose, rather than using common intervention for every patient. These tools can also help them to reach a proper diagnosis of a patient. SBST and MSK-HQ questionnaires also play major role in assessing psychosocial aspects of patients with low back pain especially those who are developing chronicity or who already developed chronicity. Physiotherapists, by using these tools not only can improve low back pain patients' health conditions but also bring positive impact by improving their psychological health. Because of this, patients may start to show positive attitude towards their condition which ultimately can lead to a better health prognosis.

In Bangladesh, there is not enough culturally validated instruments, which can assist Physiotherapists to reach a proper diagnosis to determine risk level and severity level of low back pain among patients and also contains good psychometric properties. The use of SBST and MSK-HQ questionnaires can help to achieve all of these. So, in my opinion translation and validation of both SBST and MSK-HQ is very important for those who work as Physiotherapy practitioners and dealing with musculoskeletal pain.

### **1.3 Objectives of the Study**

#### **1.3.1 General Objectives**

The aim of this study was therefore, to translate and validate the Musculoskeletal Health Questionnaire (MSK-HQ) and STarT Back Screening Tool (SBST) into Bangla for low back pain patients.

#### **1.3.2 Specific objectives:**

1. To translate MSK-HQ into Bangla language from English.
2. To adjust the Bangla translation version of MSK-HQ with the English version
3. To identify whether the patients understand the Bangla translated version of MSK-HQ.
4. To translate SBST into Bangla language from English.
5. To adjust the Bangla translation version of SBST with the English version
6. To identify whether the patients understand the Bangla translated version of SBST.

#### **1.4 Operational definitions:**

**Translation-validation:** Translation validation is the process of linguistically validation of an instrument or questionnaire translated by different translators at the same time, after combining them into a single version, this single version is back-translated into the original language. Finally comparing them to check the differences between the combined version and original version (Tsang et al.,2017).

#### **Musculoskeletal disorder:**

Musculoskeletal disorders are conditions that can affect muscles, bones, and joints and that lead to pain and disability (Perruccio et al., 2018).

#### **Low back pain:**

Low back pain is described as pain, which is located below the costal margin and above the lower gluteal folds, without or with pain in the legs. Acute low back pain is usually described because an episode of low back pain persists for less than six weeks; sub-acute low back pain as low back pain persists for six to twelve weeks; continuous low back pain as low back pain persists for twelve weeks or more (Van et al., 2006).

Musculoskeletal disorders are not contagious. They are one of the most common cause of disability in developed countries which uses very vast amount of health and social resources (Branco et al., 2016). It includes a considerable amount of health problems in developed countries relating to increased prevalence rates and becoming burdensome and causing increased medical costs, work disability and lowering quality of life (Woolf, 2001).

Musculoskeletal disorders may cause damages of the muscles ,tendons, ligaments ,joints, peripheral nerves and supporting blood vessels by an inflammatory and degenerative process comprises a considerable extent of inflammatory and degenerative process ,which mostly includes low back ,neck , shoulder ,forearm and hand at present lower extremity is being more prioritized( (Punnett & Wegman, 2004).

Musculoskeletal problems are one of the main reasons why disability is persisting for a long time and causing serious significant changes to the healthcare system in all around the world for examples, osteoporosis, osteoarthritis, rheumatoid arthritis, and sports injuries (Wong et al., 2019).

Prevalence rate of musculoskeletal disorders around the world is significantly higher and becoming one of the major reasons for long-term pain and disability and hundreds of million people are suffering from these, according to World Health Organization (WHO) and United Nations with their endorsement pf the Bone and Joint decade 2000-2010 (Brooks, 2004).

These disorders include 40% in patients who developed chronicity, 54% among patients who are disabled, 24% with activity limitation. Social participation and psychological welfare, in overall daily life of a person, are being hampered because of musculoskeletal related disorders. So, gaining a thorough knowledge about the prevalence rate of musculoskeletal injury could influence authority's decision to use resources for preventive and treatment purposes (Torgbenu et al., 2017).

26.3 percent people are suffering from musculoskeletal disorders in Bangladesh, among them men are 21.1 percent and women are 31.3 percent. People who work as housewives, cultivators, weavers, laborers are more affected. Low back, knee, neck, shoulder are mostly

affected site. (Haq et al., 2008). In Canada, 22.3% of Ontario's population almost 2.8 million people visited a physician for musculoskeletal disorders in ambulatory settings. Among them, patients with arthritis and related conditions are much more than other conditions (107.7 per 1000 persons) (MacKay et al., 2010). In a study conducted in Taiwan's working population, and found that musculoskeletal disorders affecting some body parts are very common in Taiwan. Amidst the working people above 10% people are suffering from musculoskeletal disorders of the neck, shoulders, or hands and wrists (Guo et al., 2004). In Norway, musculoskeletal disorders affected adult ranges from 23-80%, it is found in a population study (Kinge et al., 2015).

Musculoskeletal disorders result of long-term effect of repeated injuries associated with work risk. The major causes for musculoskeletal disorders are static body positions, repetitive work, muscle contracted for extended time, and amount of the force applied (Ortiz-Hernández et al., 2003). Because of their excessive and abnormal postures of back, neck and shoulder, dentists develop musculoskeletal disorders like back pain, overuse injuries of neck and problems of shoulder. (Alexopoulos et al., 2004). Among 43,000 agricultural workers in Britain, 27,000 with back pain, 10,000 suffering from upper limb or neck pain and 11,000 suffering from lower limb pain due to work related musculoskeletal disorders (Walker-Bone, 2002). The site which is most frequently affected in work related musculoskeletal disorders is low back (4.54%), one of the major reasons for visiting physician for treatment (16.8%) and taking leave from work (7.3%). Workers who work at construction site for a long time mainly affected musculoskeletal disorders related with knee and wrist or hand and also low back pain is also associated with these. 49.7% construction workers rated working in a same position for a long time as major or moderate problem in relation to musculoskeletal disorders (Merlino et al., 2003). Computer users are at a risk for developing musculoskeletal disorders, because of frequent use of mouse, sitting in the same position for long time, developing abnormal postures and working on computers (Ortiz-Hernández et al., 2003).

Musculoskeletal disorders mainly happen in workers who perform repetitive work in extreme, develop postural abnormality and do heavy lifting activities (da Costa and Vieira, 2009). In 1995, a national household survey was held in Britain and it was found than

around 506,000 people are suffering from work-related musculoskeletal problems. Those with musculoskeletal complaints said there are some sort of movement limitation between 86% and less strength between 83% present. (Buckle & Jason Devereux, 2002).

In a statement published by the Global Burden of Disease (GBD) stated that musculoskeletal disorders related implication is much greater than it was thought before, it is observed that in between 188 countries it is assorted from 9.6 percent to 28.9 percent. Low back pain became main source of problem in 86 countries and the 2<sup>nd</sup> or 3<sup>rd</sup> main reason of problem in between 67 countries (Vos et al., 2015). Depending upon the long-term nature of these conditions or based on the reason that majority of the patients may possess more than one musculoskeletal feature in many parts of the body, countless musculoskeletal treatment provider unable to find out the exact cause (Hartvigsen et al., 2013). Using proper testing procedures and intervention to acquire score through various tools are important to reach a conclusion in a scientific way. Tools which are being used for the purpose of Health status measurement should be logical and trustworthy or else there is a threat of the severe aftereffect because of the prejudiced and inaccurate outcome which can eventually lead to a false answer. These health status measurement tools features should be, for example; reliability, validity, satisfaction level and how people react to these tools, should be taken into account. (Mokkink et al., 2010)

Health practitioners do not have any clear concept regarding the effect of disease and management on patients' daily lives. There are many standard protocols regarding these problems have been initiated to understand patient reported outcomes such as symptom status, physical function, mental well-being and social activities (Nelson et al., 2015)

Patient reported outcome measures (PROMs) are standardized, verified questionnaires which are finished through patients to measure their perceptions of their very own functional reputes and well-being. PROMs are designed to measure either patients' perceptions of their general health or their perceptions of their health in relation to specific diseases or conditions. (Dawson et al., 2010). PROMs are stated without delay from the patient and determine how the affected person feels or functions with admire to their fitness

situation. these measures reflect the affected person burden of disorder (Gossec et al., 2014).

The Arthritis Research UK Musculoskeletal Health Questionnaire (MSK-HQ) is a validated patient reported outcome measure (PROM) is a validated outcome measure reported by the patient (PROM) which provides a general picture of the musculoskeletal health of a patient and how the situation of the patient changes. It involves 14 questions that include health problems like, pain, function, and also psychological symptoms. It is scored out of 56 with better musculoskeletal health reflecting the greater scores. There is one unscored question based on how much aerobic exercise has been done in the last week (Levy & Ahmed, 2018).

Arthritis Research UK's objective was to introduce a validated new Musculoskeletal Health Questionnaire (MSK-HQ) that would measure results, which would be reported by patients (PROMs) and assist the clinicians to establish individual therapy goals (Hill et al., 2016).

According to importance in Musculoskeletal Health Questionnaire(MSK-HQ): severity of pain/stiffness (in the day and night),physical function (walking and dressing), physical activity level, pain interference (with work/daily routine and with social activities/hobbies), difficulty with sleep ,fatigue/low energy levels, emotional well-being (anxiety and mood), understanding of diagnosis and treatment confidence to self-manage (pain self-efficacy), independence and overall impact from symptom. It was decided that the MSK-HQ should consist of 15 items (Hill et al., 2016).

The MSK-HQ has 14 questions, each scored from 0 (biggest influence) to 4 (least influence) (O'Neill et al., 2018). This research verified that the MSK-HQ has good working capability as a PROM, which assess the quality of life associated with musculoskeletal health and has acceptable psychometric characteristics. The MSK-HQ is easy to administer and has excellent patient acceptability (Norton et al., 2018).

Low back pain is a prevalent disorder that affects many people at some stage in their lives. It is believed that between 5 percent and 10 percent patient will develop chronic low back pain (LBP), which is liable for increased treatment expenses, sick leave, and individual suffering (Meucci et al., 2015).

Low back pain (LBP) is one of the most common health concerns, especially low back pain comprises of 15% of all back pain related conditions and 50 percent of back pain is due to a prolapsed intervertebral disc (PID) cause. Pain that lasts well below 4 weeks is generally categorized as acute pain (Konstantinovic et al., 2010). A systematic assessment of the worldwide incidence of low back pain Low back pain has been shown to be a significant issue worldwide, with the greatest incidence among women and those aged 40–80. And the incidence of one month was estimated at 23 percent (Hoy et al., 2012). In the United States, where chronic pain such as low back pain disables at least 50 million Americans. Approximately 45 percent of Americans are reported that they require medical assistance because of this matter (American Pain Society). It is often undiagnosed or treated poorly, resulting in tragic and expensive effects including long-term disability, depression, and overuse of diagnostic facilities and methods, hospitalizations, surgery (DeLeo & Winkelstein, 2002). In Australia, 12-33 percent of twenty-one million individuals experiencing low back pain every day (Henschke et al., 2008). In Canada, the yearly prevalence of low back pain is 18.6 percent in the overall adult population, and most of it is mild. 40.2 percent of those with low back pain have constant symptoms, 36.1 percent have some improvement, and 14.2% have exaggerated symptoms. (Cassidy et al., 2005). In UK, 1-year prevalence rate is 36.1 percent Denmark 56.0 percent, Germany 39.2 percent point prevalence, Belgium 33.0 percent, Sweden 23.2 percent, Iran 15.0 percent, Bangladesh 20.1 percent week prevalence (Hoy et al., 2010). Yellow flags generally focus on psychosocial variables, including the existence of pre-existing psychological circumstances, maladaptive coping strategies, reduced socio-economic or educational status, bad job satisfaction, greater physical work requirements, poor health or level of function, smoking, obesity, compensation at work or disability / sick leave, and unresolved lawsuits or back pain-related compensation problems. Sex and age were also often assessed as predictors of worse outcome (Chou & Shekelle, 2010). Some degenerative conditions, inflammatory diseases, infectious and neoplastic causes, metabolic bone disease, referred pain, psychogenic pain, trauma and congenital illnesses are relevant causes of back pain. Non-specific low back pain is described as back pain caused by unknown underlying disease (Krismer & van Tulder, 2007). Various research indicates that low back pain can result from any of the anatomical structures, including bones, intervertebral disks, joints,

ligaments, muscles, neural structures and blood vessels (Hoy et al., 2010). 24% Patients with chronic low back pain continue to have limited exercise due to risk factors such as age, smoking, neurological signs, psychosocial evaluation and stress (Grotle et al., 2005).

Back pain is now the sixth largest contributor to the global disease burden. In the recent Subgroups for Targeted Treatment (STarT) Back survey, internationally accepted research priorities, studied and demonstrated the clinical and cost-effectiveness of stratified care for non-specific low back pain in primary care (Foster et al., 2014). There are a few clinical instruments for back pain to help clinicians detect patient's danger of chronicity or to improve treatment strategy. The STarT Back Tool is a newly validated tool created to recognize patient subgroups to guide the delivery of primary care and early secondary prevention and helps in making decision in the beginning (Hill et al., 2010). Psychosocial variables are especially helpful in assessing people who develop chronic back pain, which is hard to detect and is often unnoticed in primary care. In responding to this challenge, the STarT Back Tool has been created as a convenient-to-use LBP sub-grouping tool for primary care use (Hay et al., 2008). We used the five-item STarT Back generic condition tool, the psychosocial subscale of nine-items adapted to screen and recognize distress under other circumstances. The issues are addressed: fear, depression, pessimistic patient expectation low mood and how much the patient is disturbed by their pain. All questions use a 'agree' or 'disagree' reaction format, with the exception of the bothersome item by using a Likert scale (Irgens et al., 2013). Two scores are generated by the Keele STarT Back Screening Tool: total score and a bothersome subscale score. The distress subscale score is used to distinguish the high-risk group. Therefore, subscale scores range from zero to five, where patients score four or five are categorized as high danger. The general score is used to distinguish low-risk patients from the medium-risk group. Scores range from zero to nine and are generated by adding answers to all instrument components. Patients who are categorized from zero to three are categorized as low risk and those at four to nine are categorized as medium risk (Main et al., 2012). LBP patients could be assigned into varying interventions by making use of SBST. SBST developers suggested particular intervention for high-risk patients by combining physical and psychological methods. The SBST has been recently discovered in 16 languages (Irgens et al., 2013). However, recent results indicate that therapy results are better when using STarT Back scores to perform

risk-stratified procedures; for example, patients with high STarT Back scores benefit from risk-level focused treatments (Wideman et al., 2012).

The purpose of STarT Back Tool is to detect those patients with the most severe backpain complaints and who may therefore have a particular need for care. Patients in the high-risk group mentioned more frequently a high amount of duration because of low back pain in the previous year and the current episode lasted more than two weeks, and that they were more likely to have had regular pain in the previous two weeks than patients in the low and medium risk groups. In early years, a greater amount of low back pain duration has been shown to be an unfavorable prognostic factor in patients with primary care of low back pain. STarT was developed in the UK and translated into Norwegian, Dutch, French, Spanish, Welsh, Arabic and Chinese Mandarin (Morso et al., 2011). The SBST is being translated into almost 20 languages at the moment. The SBST has been recently validated and cross-cultural adapted into French language. Furthermore, apart from the validation of the translation itself, it is strongly suggested that researchers should provide guarantee about the latest version which has adequate psychometric characteristics for the planned implementation after the translation and adaptation phase. In fact, a tool should maintain both component-level features and internal consistency, as well as reliability and validity of the score (Bruyère et al., 2014).

Translational research on the use of PROMs in clinical practice, taking into account the gap between scientific evidence based on result and their execution in practice, appears to be an important need (Osthols et al., 2018). Cross-cultural analysis has particular methodological limitations, most of which have to do with the consistency of translation and the comparability of outcomes in various cultural and ethnic groups. It is insufficient to translate a questionnaire literally. The additional challenge is to adapt it in a culturally relevant and comprehensible manner while maintaining the meaning and purpose of the original versions (Sperber, 2004). Also, each society has its own features that influence its writings. However, despite the fact that the medical language has similarities across different languages, the translations in this study were not exactly the same as the original

versions. Thus, even though there is something prevalent widely in cultural traits, linguistic variances are still present (Pudas-Tähkä et al., 2013). The translation process has various methods. The method of translation needs proficiency, understanding and expertise. There are important translation issues which produces negative impact unless professional translators work for this matter (Sperber, 2004). All self-referenced approaches require a cross-cultural framework. They describe the cross-cultural version as a technique that looks at each language translation and cultural variation problems in order to prepare a questionnaire to be used in some other language. it promotes that this technique must be adjusted in accordance with five one-of - a-kind circumstances defined by the target population (Acquadro et al., 2008)

An actual translation involves: 1. a double forward and backward translation; 2. face validity of the documents and includes understanding of multidisciplinary specialist panel; 3. final translation testing in practice; and 4. process documentation (Stilma et al., 2015). Selecting appropriate translators and members of the panel is a main component to be regarded in order to improve the performance of an tool or scale's translation, back-translation and cross-culturally adaption. Pilot testing of a translated tool or scale among respondents whose language is the tool's required language to assess directions, materials and the tool's reaction format for clarity also improves the quality of the translated instrument's final version. (Sousa & Rojjanasirat, 2010).

A pilot research in Bangladesh determined the validity and reliability for use in postpartum Bangladeshi females with urinary incontinence for the Bengali transcribed in brief form IIQ-7. The analysis showed that both the Bengali language version of the short form IIQ-7 and the SF-36 are both dependable and legitimate. Both the SF-36 and IIQ-7 Bengali language translation demonstrated proper test-retest reliability, internal consistency, simultaneous, discriminant and probabilistic validity for use in the postpartum population of Bangladesh and consistent with earlier studies (Walton et al.,2012).

The translated and culturally modified FIM tool is a scientifically valid tool which can be used in future days by physicians, other healthcare professionals, health researchers, clinical experts and environmental decision makers to initiate clinical trials and assess health policies for individuals with disabilities in Bangladesh (N Rahman et al.,2017)

### **3.1 Study design**

The aim of this study was therefore, to translate and validate the Musculoskeletal Health Questionnaire (MSK-HQ) and STarT Back Screening Tool (SBST) into Bangla for low back pain patients. For this reason the investigator choose a quantitative research model in the form of cross sectional study design to conduct this study.

### **3.2 Study area**

Musculoskeletal department of Centre for the Rehabilitation of the Paralyzed (CRP) at Savar, Dhaka was chosen as a venue by which investigator could obtain an appropriate sample who had low back pain. The investigator thought that it was the most suitable place because there has the availability of the desire sample.

### **3.3 Study duration:**

The data has been collected from 1<sup>st</sup> June 2019 to 30<sup>th</sup> September 2019.

### **3.4 Study population**

A population refers to the members of a clearly defined set or class of people, objects or events that was the focus of the investigation. So, all of the low back pain patients receiving treatment from CRP, Savar, Dhaka, Bangladesh within the study period, who fulfilled the inclusion and exclusion criteria of this study were the population of this study.

### **3.5 Sampling techniques**

The study was conducted by using the convenience sampling method because it is easier to get subjects according to the criteria concerned with the study purpose through the convenience sampling procedure. convenience sampling where "all" the available persons in the study population are selected for the study until the required sample size is reached. (Omair, 2014)

### 3.6 Sample size

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

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

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

$$d = 0.05$$

$$p = 0.42 \text{ (Prevalence } p = 42\%)$$

$$q = 1 - p$$

$$= 1 - 0.42$$

$$= 0.58$$

According to this formula of sample size calculation, the actual sample size was about 374 but due to the limitation of time took only 84 samples for MSK-HQ and 95 samples for SBST conveniently from the population for this study. They were selected according to the inclusion and exclusion criteria from the population of the study.

### **3.7 Inclusion criteria**

- Participants with low back pain
- Both male and female are selected.
- All ages were included as there was objective of the study.
- Subject who were willing to participate in the study otherwise they will not give exact information that was helpful to the study.
- Those who are cooperative.

### **3.8 Exclusion criteria**

- Subject who are not willing to participate in the study.
- Subject who were medically unstable. Because medically unstable patient can be confused with the question that can mislead the result of the study.
- Subjects who do not have low back pain

## **3.9 Method of data collection**

### **3.9.1 Data collection tools & instruments**

Before going through data collection procedure, there are six phases such as, Contact with Musculoskeletal Health Questionnaire (MSK-HQ) and STarT Back Screening Tool (SBST) developers, initial translations (English to Bangla), synthesis, backward translations, Expert committee review, Test of the pre-final version were performed.

Two structured questionnaires and demographic information chart was used as a data collection instrument. In that time some other necessary materials are used like pen, pencil, white paper, clip board. For data collection, the Bangla questionnaire was delivered.

### **3.9.2 Data collection procedure**

Before data collection, researcher was first introduced himself to the participants & took verbal consent. Then provide written consent form to the participant, and after signed the consent form, data was collected through two questionnaires separately from the participants by face to face conversation. In both questionnaires, there was participant's socio-demographic information included. For data collection, the Bangla type of questionnaire was delivered. After that a date was fixed to collect the questionnaire from the recipients. The question will ask face to face interview.

### **3.9.3 Data analysis**

Data was analyzed with the software named Statistical Package for Social Sciences (SPSS) Version 22.0. Data resolve numerically coded and captured in Microsoft Excel, used an SPSS 22.0 version software program. Microsoft Office Excel 2013 used to decorate the bar graph and pie charts.

### **3.10 Ethical consideration**

The research project was presented to the BHPI Department of Physiotherapy at first to perform the study and received permission from the ethical board. Institutional Review Board (IRB) authorized the study and obtained permission to conduct this study. The World Health Organization (WHO) and the Medical and Research Council of Bangladesh (BMRC) pursued ethical problems. During the course of the study, the participants who were involved in the study gave their permission and researcher verbally clarified the objective of the research and the contents of the consent form to the participants. Their jobs were not interfered by the research.

### **3.11 Informed Consent**

A consent form was provided for this study and verbally clarified the objective of the types of studies and consent to the topic. Participants were completely voluntary and are entitled to withdraw at any moment. Participants were also assured of maintaining their confidentiality. Information may be released in any presentation or writing, but their secrecy will be maintained. The research findings may not have any direct impacts on them, but in the future the research may benefit the members of the physiotherapy population. The study wouldn't make them embarrassed.

**4.1: Musculoskeletal Health Questionnaire (MSK-HQ)-**

Number of participants-84,

Musculoskeletal condition- Low back pain

**4.1.1 Sociodemographic information for MSK-HQ:****Age of the participants:**

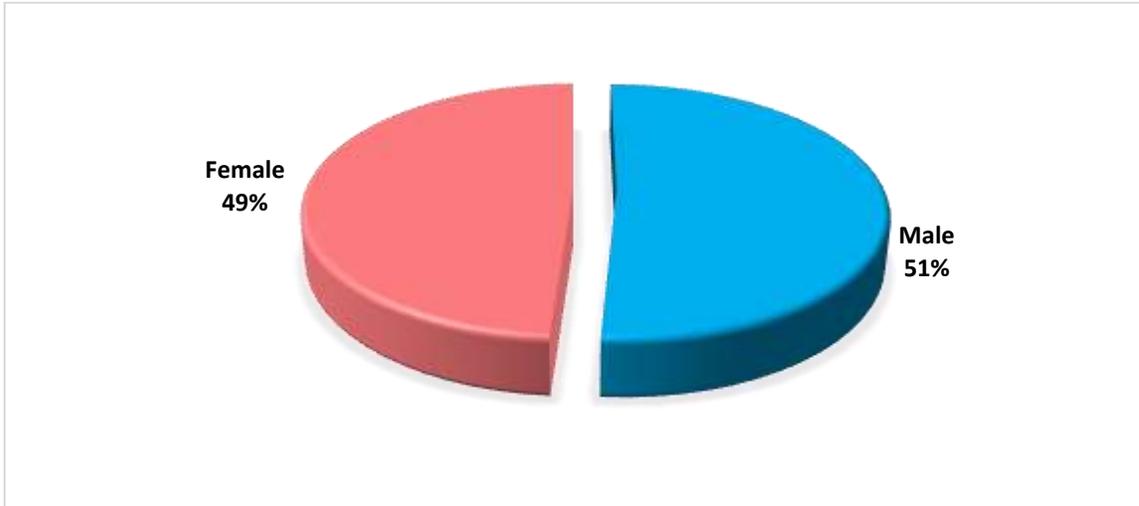
The study was conducted on 84 participants who have low back pain. In the study the minimum age of a participant is 16 & maximum age of a participant is 70. Their mean age is 41.7619, median is 40 and standard deviation is 14.99.

**Table-1: Age range of the participants (MSK-HQ)**

Age range	Number (N=84)	Percentage (%)
11-20	5	6.0
21-30	18	13.1
31-40	23	14.3
41-50	12	17.9
51-60	15	21.4
61-70	11	27.4
Total	84	100

**Gender ratio:**

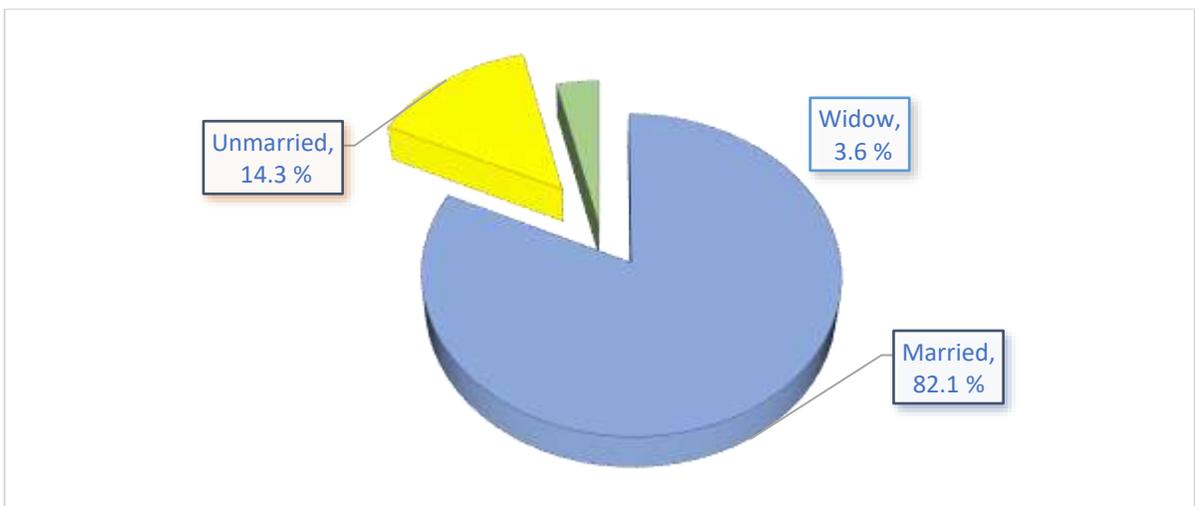
Among the 84 participants, Figure-1 shows 51.19% participants were male(n=43) & 48.81% participants were female (n=41).



**Figure-1: Gender ratio of the participants (MSK-HQ)**

**Marital status:**

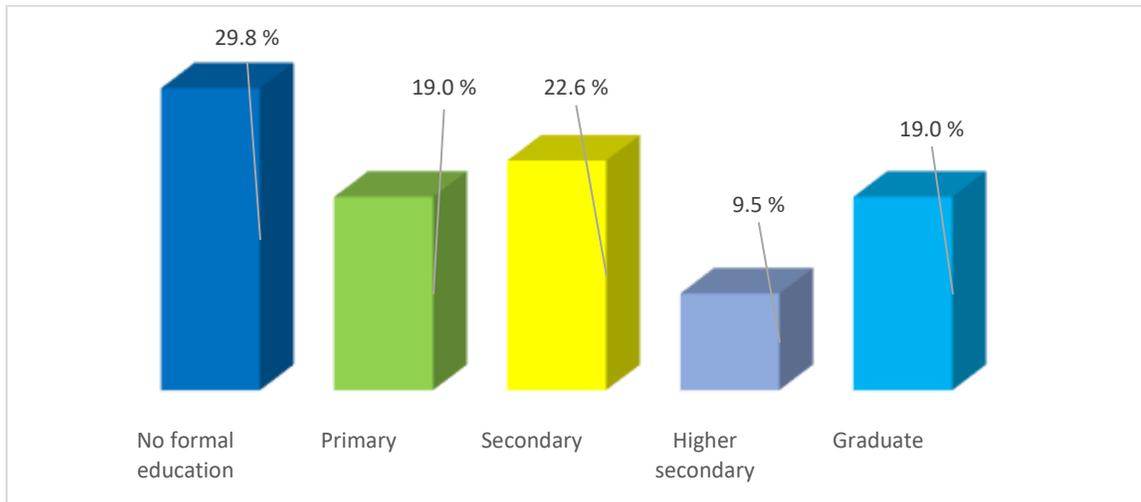
Figure-2 shows, among the participants, married participants were 82.14 % (n=69) unmarried were 14.29%, (n=12) and widow were 3.57% (n=3).



**Figure-2: Marital status of the participants (MSK-HQ)**

**Educational Background:**

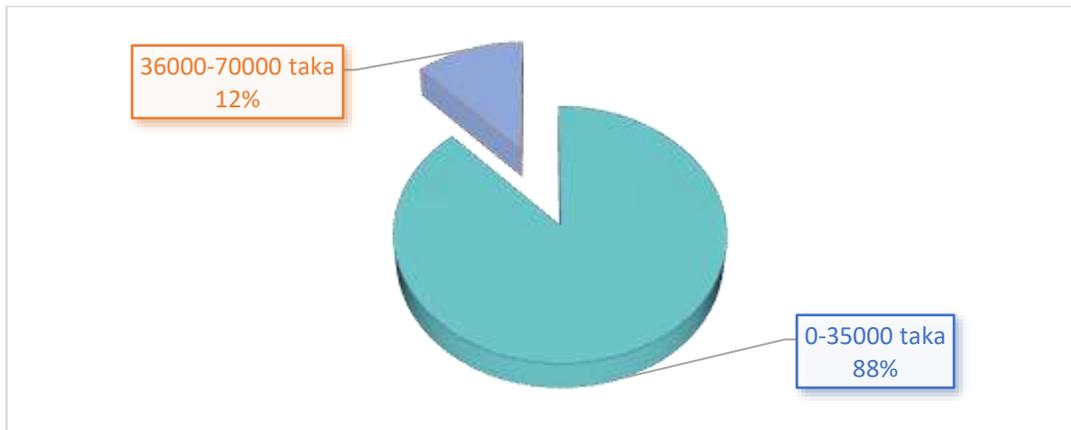
In Figure-3 shows, educational background of the participants such as, no formal education 29.76% (n=25) , Primary 19.05% (n=16), Secondary 22.62% (n=19), Higher secondary 9.52% (n=8), Graduate 19.05%(n=16).



**Figure-3: Educational background of the participants (MSK-HQ)**

**Monthly income:**

In figure-4, monthly income ranges from; 1) 0-35,000 thousand (88.10%) taka;  
2) 36,000- 70,000 thousand (11.90%) taka.



**Figure-4: Monthly income of the participants (MSK-HQ)**

**Occupation:**

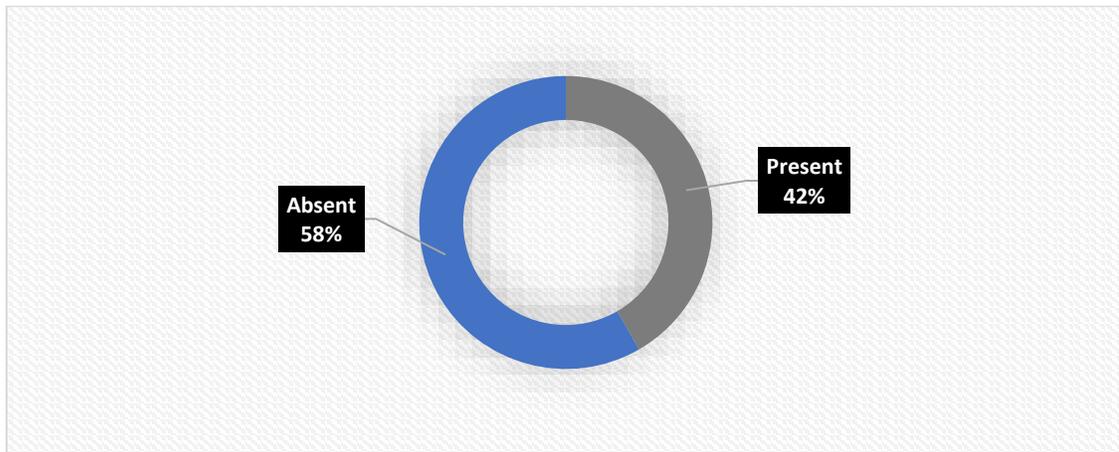
In this study, table-2 shows among the 84 participants housewives were 45.24%, Service holder 14.29%, Businessman & Retired 8.33%, Farmer 5.95%, Jobless 4.76%, Student 3.57%, teacher, day laborer & driver 2.38%, garments worker & immigrant 1.19%.

**Table-2: Occupation of the participants (MSK-HQ)**

Occupation	Number	Percentage%
Farmer	5	6.0
Day Laborer	2	2.4
Service holder	12	14.3
Garments worker	1	1.2
Driver	2	2.4
Businessman	7	8.3
House wife	38	45.2
Student	3	3.6
Teacher	2	2.4
Retired	7	8.3
Jobless	4	4.8
Immigrant	1	1.2
Total	84	100

**Co-morbid disease:**

Figure-5 shows morbid disease such as diabetes, hypertension, asthma, heart disease present among 41.7% (n=35) and absent among 58.3% (49) participants.



**Figure-5: Co-morbid disease among the participants (MSK-HQ)**

**Causes of pain:**

In this study, table-3 shows, among 84 participants pain occurred due to; bending activities & degeneration 17.86%, prolong sitting 16.67%, due to fall 9.53% , heavy load 8.33% , injury & muscle stiffness 7.14%, disc prolapse & muscle weakness 5.95%, nerve compression, disc protrusion, walking 1.19%.

**Table-3: Causes of pain among the participants (MSK-HQ)**

Causes of pain	Number	Percentage %
Nerve compression	1	1.2
Due to fall	8	9.5
Degeneration	15	17.9
Disc protrusion	1	1.2
long time walking	1	1.2
Bending activities	15	17.9
Injury	6	7.1
disc prolapse	5	6.0
prolong sitting	14	16.7
Muscle stiffness	6	7.1
Heavy load	7	8.3
Muscle weakness	5	6.0
Total	84	100

**Table-4: Musculoskeletal Health Questionnaire (MSK-HQ) related information**

The MSK-HQ is scored on a range of 0- 56, with a higher score indicating better MSK-HQ health status. Mean of the total score=30.96 was found in this study.

<b>MSK-HQ data:</b>	<b>Number</b>	<b>Percentage%</b>
1. Pain/stiffness during the day-		
Very severe	5	5.95
Fairly severe	17	20.24
Moderately	43	51.19
Slightly	19	22.62
Not at all	0	0
2. Pain/stiffness during the night-		
Very severe	2	2.38
Fairly severe	15	17.86
Moderately	39	46.43
Slightly	28	33.33
Not at all	0	0
3. Walking-		
Unable to walk	3	3.57
Severely	31	36.90
Moderately	26	30.95
Slightly	21	25
Not at all	3	3.57

<b>MSK-HQ data:</b>	<b>Number</b>	<b>Percentage%</b>
<b>4. Washing/Dressing-</b>		
Unable to wash or dress myself	1	1.19
Severely	12	14.29
Moderately	23	27.38
Slightly	23	27.38
Not at all	25	29.76
<b>5. Physical activity levels-</b>		
Unable to do physical activities	5	5.95
Very much	6	7.14
Moderately	43	51.19
Slightly	27	32.14
Not at all	3	3.57
<b>6. Work/daily routine-</b>		
Extremely	2	2.38
Severely	11	13.10
Moderately	41	48.81
Slightly	27	32.14
Not at all	3	3.57
<b>7. Social activities and hobbies</b>		
Extremely	2	2.38
Severely	9	10.71
Moderately	39	46.43
Slightly	29	34.52
Not at all	5	5.95

<b>MSK-HQ data:</b>	<b>Number</b>	<b>Percentage%</b>
8. Needing help-		
All the time	2	2.38
Frequently	13	15.48
Sometimes	28	33.33
Rarely	27	32.14
Not at all	14	16.67
9. Sleep-		
Every night	1	1.19
Frequently	21	25
Sometimes	28	33.33
Rarely	26	30.95
Not at all	8	9.52
10. Fatigue or low energy-		
Extreme	3	3.57
Severe	7	8.33
Moderate	21	25
Slight	34	40.48
Not at all	19	22.62
11. Emotional well-being-		
Extremely	7	0
Severely	11	13.10
Moderately	39	46.43
Slightly	27	32.14
Not at all	7	8.33

<b>MSK-HQ data:</b>	<b>Number</b>	<b>Percentage%</b>
12. Understanding of your condition and any current treatment		
Not at all	0	0
Slightly	13	15.48
Moderately	46	54.76
Very well	23	27.38
Completely	2	2.38
13. Confidence in being able to manage your symptoms		
Not at all	0	0
Slightly	17	20.24
Moderately	50	59.52
Very well	17	20.24
Extremely	0	0
14. Overall impact		
Extremely	0	0
Very much	18	20.48
Moderately	38	45.78
Slightly	27	32.53
Not at all	1	1.20
➤ Scoring (0-56) –		
0-28	27	32.14
29-56	57	67.86

---

<b>MSK-HQ data:</b>	<b>Number</b>	<b>Percentage%</b>
---------------------	---------------	--------------------

---

Physical activity levels-

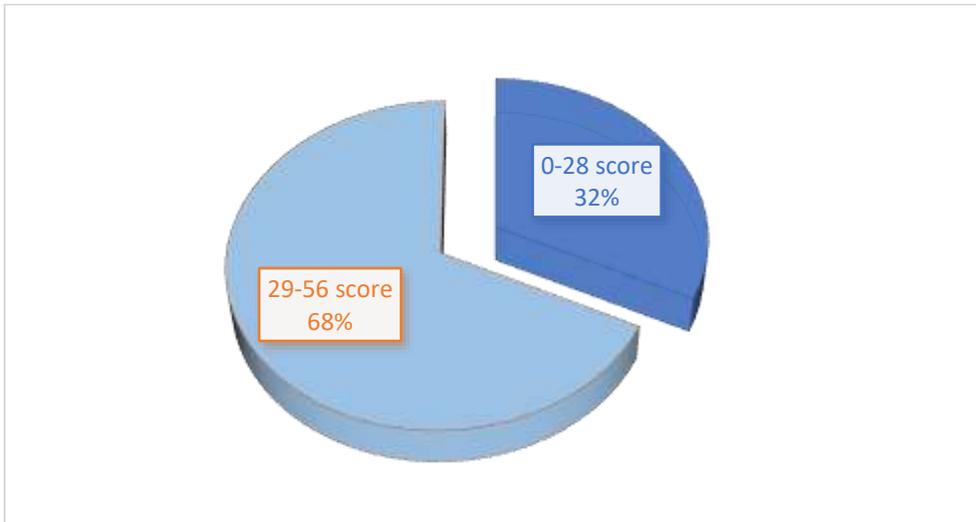
None	49	58.33
1 day	2	2.38
2 day	9	10.71
3 day	5	5.95
4 day	5	5.95
5 day	5	5.95
6 day	1	1.19
7 day	8	9.52

**Scoring of MSK-HQ:**

Figure-7, shows Scoring (0-56) of MSK-HQ ; ranges from

1) 0-28 (32.14%) & n=27

2) 29-56 (67.86%) & n=57



**Figure-7: MSK-HQ Scoring of the participants**

## 4.2: The STarT Back Screening Tool (SBST)-

Number of participants-95,

Musculoskeletal condition- Low back pain

### 4.2.1 Sociodemographic information for SBST:

#### Age of the participants:

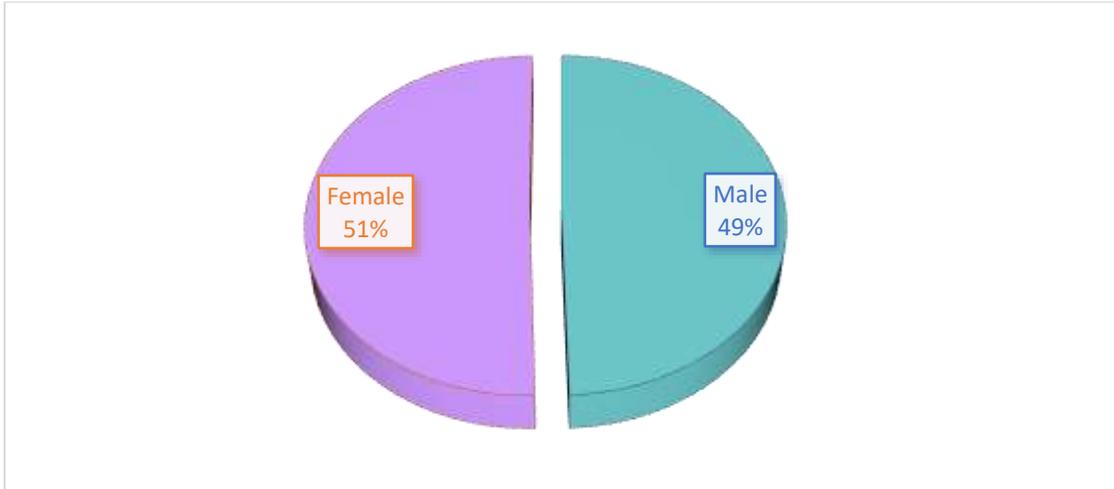
In table-5, the study was conducted on 95 participants who have low back pain. In the study the minimum age of a participant is 13 & maximum age of a participant is 75. Their mean age is 44.98, median is 45 and standard deviation is 11.83.

**Table-5: Age range of the participants (SBST)**

Age range	Number (N=95)	Percentage (%)
11-20	1	1.1
21-30	9	9.5
31-40	26	27.4
41-50	36	37.9
51-60	14	14.7
61-75	9	9.5
Total	95	100

**Gender ratio of the participants:**

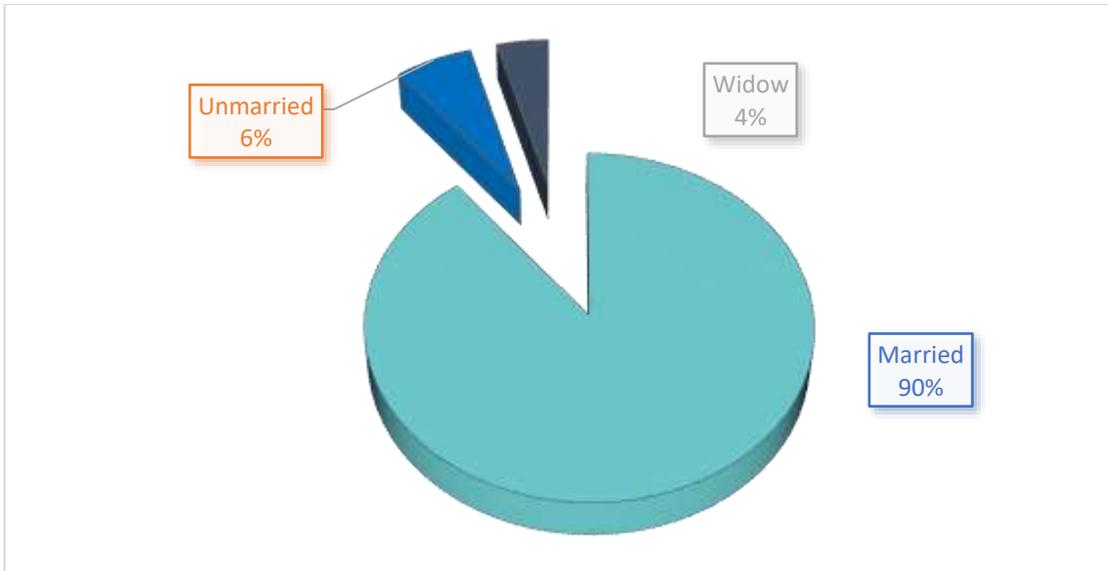
In figure-8, it shows among the 95 participants 49.5% participants are male(n=47) & 50.5% participants are female (n=48).



**Figure-8: Gender ratio of the participants (SBST)**

**Marital status:**

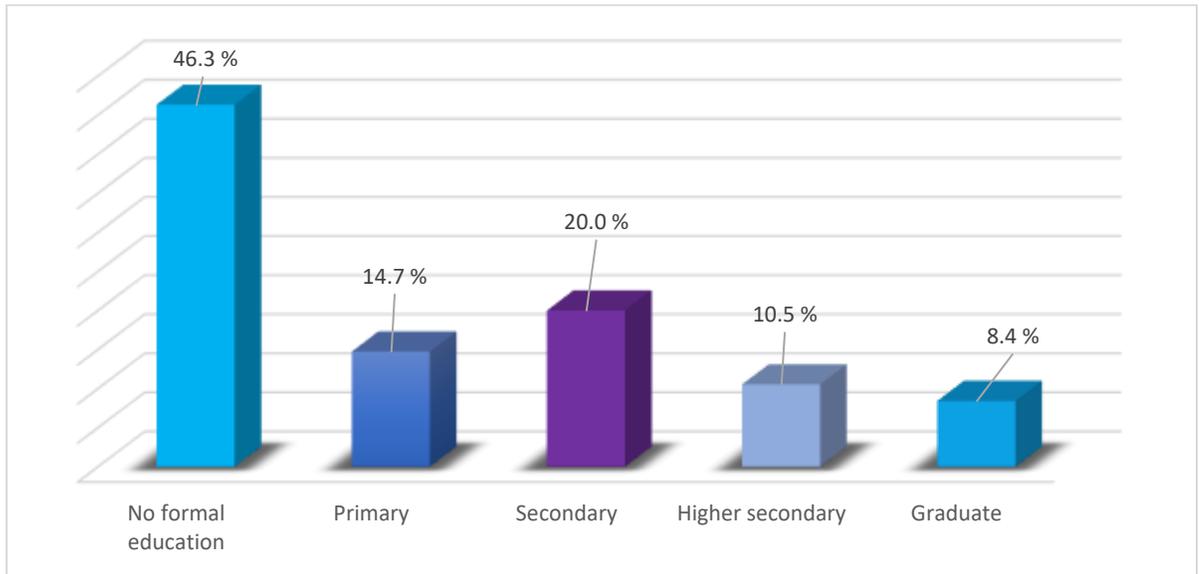
Figure-9 indicates the marital status of the participants in which, participants who are married 89.5% (n=85), unmarried 6.3% (n=6) and widow 4.2%. (n=4).



**Figure-9: Marital status of the participants (SBST)**

### Educational Background:

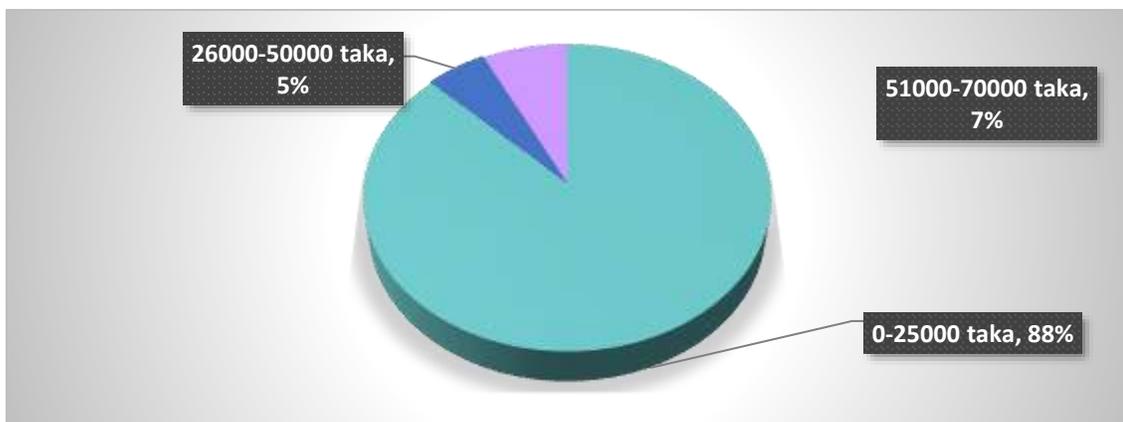
In figure-10, participants educational background is shown, participants with no formal education 46.32% (n=44), Primary education 14.74% (n=14), Secondary education 20% (n=19), Higher secondary education 10.53% (n=10) and Graduate 8.42% (n=8).



**Figure-10: Educational background of the participants (SBST)**

### Monthly income:

Figure-11; participants monthly income ranges from 1) 0-25000 taka among 87.37% (n=83) participants, 2) 26000-50000 taka among 5.26% (n=5) participants and 3) 51000-70000 taka among 7.37% (n=7) participants.



**Figure-11: Monthly income of the participants (SBST)**

**Occupation:**

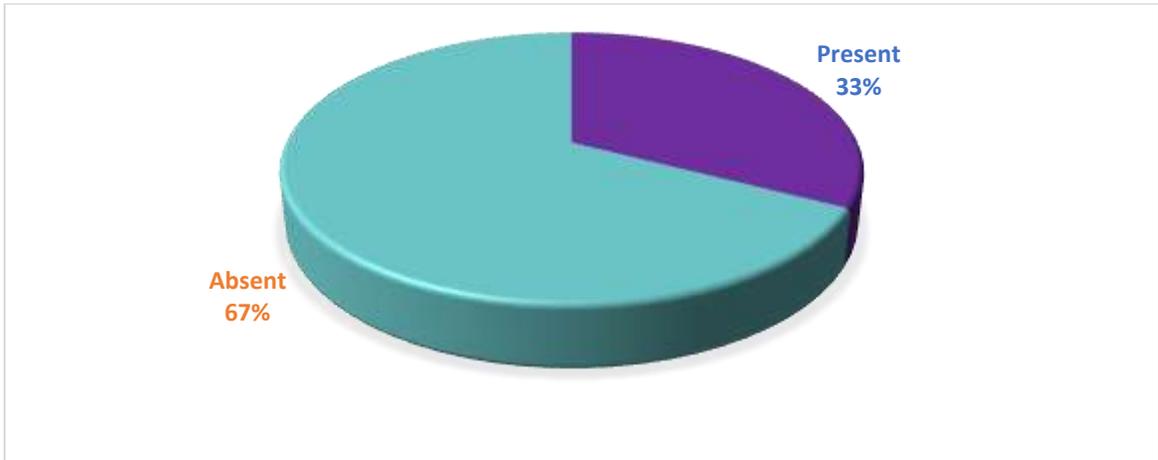
Table-6 of this study, shows among the 84 participants housewives were 46.32%, day laborer 12.63%, farmer 8.42%, service holder & businessman 7.37%, retired 4.21%, jobless 3.16%, garments worker, driver& student 2.11%, teacher, rickshaw puller, immigrant, security guard 1.05%.

**Table-6: Occupation of the participants (SBST)**

Occupation	Number	Percentage%
Farmer	8	8.4
Day Laborer	12	12.6
Service holder	7	7.4
Garments worker	2	2.1
Driver	2	2.1
Rickshaw puller	1	1.1
Businessman	7	7.4
House wife	44	46.3
Student	2	2.1
Teacher	1	1.1
Retired	4	4.2
Jobless	3	3.2
Immigrant	1	1.1
Security guard	1	1.1
Total	95	100

**Co-morbid diseases:**

Figure-12 of this study shows, co-morbid disease such as diabetes, hypertension, asthma, heart diseases, were present among 32.63% and were absent among 67.37% participants.



**Figure-12: Presence of co-morbid diseases among the participants (SBST)**

**Causes of pain:**

In this study, different causes of pain among the participants was shown in table-7, where various causes like degeneration 21.05%, prolong sitting & heavy load 17.89%, bending activities 12.63%, injury 9.47%, due to fall, 8.42%, disc prolapse 4.21%, standing 3.16%, nerve compression 2.11%, walking, muscle stiffness, muscle weakness 1.1% has been found.

**Table-7: Causes of pain among the participants (SBST)**

Causes of pain	Number	Percent
Nerve compression	2	2.1
Due to fall	8	8.4
Degeneration	20	21.1
long time walking	1	1.1
Bending activities	12	12.6
Injury	9	9.5
disc prolapse	4	4.2
prolong sitting	17	17.9
Muscle stiffness	1	1.1
Heavy load	17	17.9
Muscle weakness	1	1.1
long time standing	3	3.2
Total	95	100.0

**Table-8: STarT Back Screening Tool (SBST) related information-**

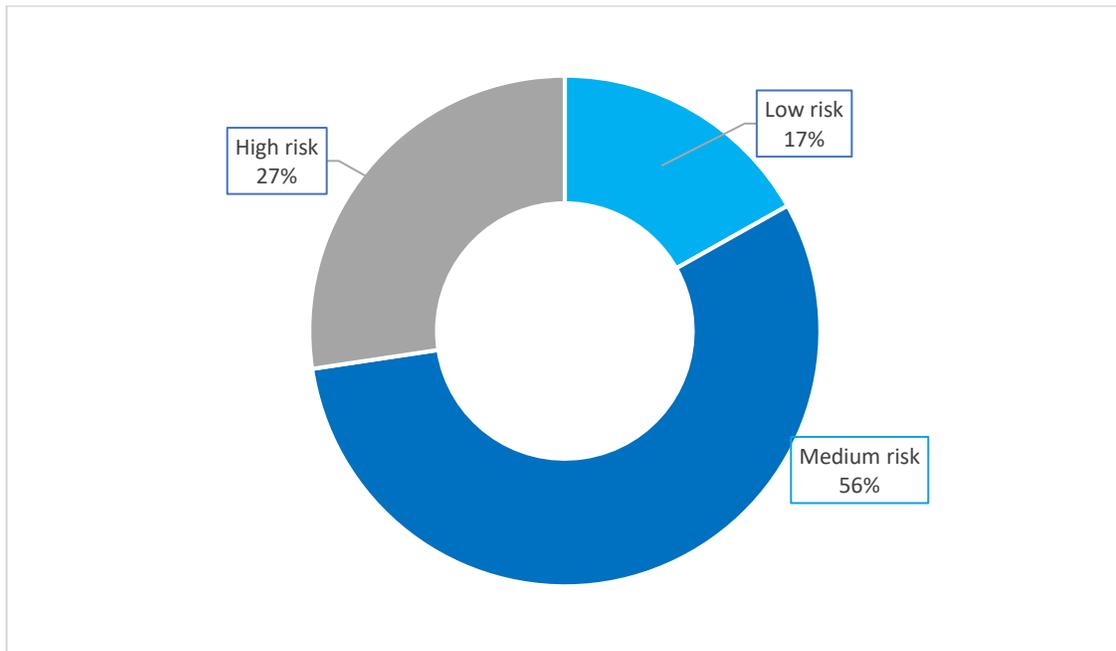
To determine risk level (low, medium, high) of low back pain patients.

<b>SBST data</b>	<b>Number</b>	<b>Percentage%</b>
1. My back pain spread down my legs-		
Disagree	31	32.98
Agree	64	67.02
2. Pain in the shoulder or neck-		
Disagree	64	67.37
Agree	31	32.63
3. Walked short distances-		
Disagree	23	24.21
Agree	72	75.79
4. Dressed more slowly than usual-		
Disagree	43	45.26
Agree	52	54.74
5. Not really safe to be physically active with this condition-		
Disagree	22	23.16
Agree	73	76.84
6. Worrying thoughts-		
Disagree	27	28.42
Agree	68	71.58

<b>SBST data</b>	<b>Number</b>	<b>Percentage%</b>
7. My back pain is terrible, never going to be better-		
Disagree	63	66.32
Agree	32	33.68
8. Unable to enjoy-		
Disagree	33	34.74
Agree	62	65.26
9. Bothersome level-		
Not at all, Slightly, Moderately	65	68.42
Very much, Extremely	30	31.58
Risk level		
Low risk	16	16.84
Medium risk	53	55.79
High risk	26	27.37

**Risk level:**

Figure-14 of this study shows that among 95 participants; participants who were in low risks 16.84% (n=16), who were in medium risks -55.79% (n=53), and those who were in high risks - 27.37%. (n=26).



**Figure-14: Risk level of low back pain participants (SBST)**

The objective of this study was to translate and validate Musculoskeletal Health questionnaire (MSK-HQ) for musculoskeletal disorders and STarT Back screening tool (SBST) for low back pain patients. It is a common knowledge that patients do not like interventions which are of poor quality and does not benefit the patients. So appropriate validated tool which can measure patients physical status, mental status and which are cross culturally adapted should be implemented.

Bangla as a language consists of many complex words. Translating a question from any other language into Bangla requires extra concentration and requires the help of experts who are familiar with these translation process. One question that can arise even before translation and cross-cultural adaptation begin is whether any understandable target-language version of the instrument is possible. In the focus-group discussions conducted after psychometric testing of version (Fukuhara et al., 1998).

In this study, before pre-final version testing of Musculoskeletal Health Questionnaire (MSK-HQ), some linguistic differences have been found in forward translations. It was observed for pain/stiffness during the day(item-1), pain/stiffness during the night(item-2), walking(item-3), washing/dressing(item-4), physical activity levels(item-5),work/daily routine(item-6), social activities and hobbies(item-7), needing help(item-8), sleep(item-9), fatigue or low energy(item-10), emotional well-being (item-11), understanding of your condition and any current treatment(item-12), confidence in being able to manage your symptoms(item-13), overall impact(item-14) and physical activity levels(item-15).

Linguistic differences found in forward translation of Bangla language from English version of the questionnaire, in physical activity levels(item-5), social activities and hobbies(item-7), understanding of your condition and treatments(item-12), confidence in being able to manage your symptoms(item-13).some linguistic differences also found in the introductory phase because of difficulty in understanding of the word ‘ joint’ and ‘stiffness’.

Before the pre-final version testing, all of these were modified through expert committee opinion to ensure that these Bangla translated version of the questionnaires were related to the original version of the English questionnaire. In the pre-final version testing, while communicating with patient, it was found that participants encountered less difficulty while answering the questions even though they had still little trouble understanding the item-12 and item-13 during the pre-final version testing and needed to repeat a few times more to make them understand. Some similar problem also found in the Italian version of MSK-HQ. There some phrases were unknown and because of that in Italian survey some parts were deleted or modified to get the scale in Italian such as introductory part and items, 1, 2 and 8 (Galeoto et al., 2019).

It should be acknowledged that while this formal translation process has provided useful insights into how a person interprets each questionnaire item, it did not address the construct validity, reliability, or item response patterns necessary for a successful cross-cultural adaptation (Bruyère et al., 2012).

In this study, mean of the total score was found 30.96 among 84 participants and mean of the total score 37.39 was found among 250 sample in the Italian study of MSK-HQ (Galeoto et al., 2019).

In this study, all of the information obtained from the 84 participants through verbal communication, where mean age was found 41.76. Between the participants, profession such as, housewives 45.24%, Service holder 14.29%, Businessman & Retired 8.33%, Farmer 5.95%, Jobless 4.76%, Student 3.57%, teacher, day laborer & driver 2.38%, garments worker & immigrant 1.19% were found. These participants verbally reported their causes of pain which were bending activities & degeneration 17.86%, prolong sitting 16.67%, due to fall 9.53%, heavy load 8.33%, injury & muscle stiffness 7.14%, disc prolapse & muscle weakness 5.95%, nerve compression, disc protrusion, walking 1.19%. In another study in Italy, mean age was found 40.64. Professions such as students, health professionals, sedentary worker, non-sedentary worker, retired, housewife, freelancer and unemployed were found accordingly 19.2%, 8.4%, 24%, 24%, 7.2%, 4.8%, 7.6% and 4% among 250 participants (Galeoto et al., 2019). Both of these studies show similarity with each other.

STarT Back screening tool is a valid, simple, and useful tool for subgrouping low back pain patients, it has its own considerations, as well. For example, targeted treatment based on STarT is not explicit. Medium risk patients refer to physiotherapy, however it is not clear what kind of physiotherapy methods are useful for such patients. It seems that further clinical research is needed to shed light on these uncertainties (Abedi et al., 2015).

The focus of this study is translating language and the direct comparison of discriminative validity with data from the original validation of the English version. Disadvantage of this study is that the translation and validation were not specifically inclusive of non-native speakers as suggested by some methodologists (Morso et al., 2011).

In this study, before pre-final version testing, during forward translation process, linguistic differences have been identified. They were observed for ‘spread down’(item-1), I have had pain in the shoulder (item-2), walked short distances(item-3), dressed more slowly(item-4) it’s not really safe and to be physically active, (item-5), worrying thoughts(item-6), back pain is terrible and it’s never going to get any better(item-7), have not enjoyed all the things(item-8), Bothersome (item-9).

Translation difficulties encountered as a part of this study included the fact that some English words and sentences from the original start back screening tool were hard to translate into Bangla, such as, in item-5 ‘it’s not really safe for a person with a condition like mine to be physically active’ , in item-6 worrying thought have been going through my mind a lot of the time. Some linguistic differences have also been seen in some words such as ‘short distances’, ‘terrible’, ‘not enjoyed’ also have been encountered during forward translation process. Similar difficulties also found in the French version of the SBST questionnaire during the translation process for example, “back pain”, “my leg(s)”, “enjoy”, “how bothersome” and “worrying thoughts” and also translation of item 6 was the most difficult because “worrying thoughts have been going through my mind a lot of the time” has no real equivalence in French (Bruyère et al., 2012).

Before pre-final version, all of these were modified through expert committee opinion to ensure that these Bangla translated version of the questionnaires were related to the original English version of the questionnaire. In the pre-final version testing, while communicating

with patient, it was found that participants encountered no difficulty while answering the questions during the pre-final version testing.

In this study, between 95 participants with low back pain, mean age was found 44.98 which was similar with a study conducted in France, where participants mean age was 48 (Bruyere et al., 2012). Risk level of low back pain among 95 participants, those with low risks were 84%, medium risks were 55.79% and those who were in high risks were 27.37%. In a Danish cohort study, the risk level among 311 participants was 39.8% (low), 34.0% (medium) and 26.2% (high) was found (Morso et al., 2011). In a Persian study with 295 participants, risk level: low risk 41.7%, medium risk 31.7% and high risk 26.6% was found (Abedi et al., 2015). There seems to be similar risk level could be found between these studies.

Cross cultural validation for the Musculoskeletal Health Questionnaire and STarT Back Screening Tool was not included in this study, as it is still under process and has not been completed yet, in the future it will be also included with this study.

## **Limitation of the study**

The expected sample size was 374 for this study but due to resource constrain & time limitation researcher could manage 84 samples for MSK-HQ and 95 samples for SBST, which were smaller than actual sample size. There were no similar literatures found in general for Translation and validation for Musculoskeletal Health Questionnaire for musculoskeletal disorders and STarT Back Screening tool for low back pain, because of that, it is difficult to compare the study with the other research. The researcher was able to collect data from CRP, Savar, Dhaka for a short period of time which will affect the result of the study to generalize for wider population. The questionnaire was collected only through searching sufficient literature but considering the context of the demography of the population a pilot study would substantial before developing questionnaire. The formal translation process provides necessary insights into how a person interprets each question, it did not address the construct reliability or patient responsiveness which is needed for successful cultural adaptation. The research project was done by an undergraduate student and it was first research project. So, the researcher had limited experience with techniques and strategies in terms of the practical aspects of research. As it was the first survey of the researcher so might be there were some mistakes that overlooked by the supervisor and the honorable teacher.

**6.1 Conclusion:**

Low back pain is one of the most common musculoskeletal disorder all around the world. Even though it is very known but diagnostic instruments designed for treatment purpose of low back pain is very limited. All low back pain problem related patients are treated similarly, in this study, why proper instruments are important for determining a patient's condition is shown. STart Back screening tool (SBST) and Musculoskeletal Health Questionnaire (MSK-HQ) both of these questionnaires are designed to fulfill these objectives. These tools can determine chronicity level of patient's condition and also can identify the risk level they are in (low, medium or high). Not only that, it also assesses their mental health as well as physical health. Analysis of this study showed that for MSK-HQ, among 84 participants, mean age was 41, with maximum inclusion of middle-aged patients who are suffering from low back pain and between them almost 68% are going towards chronicity. In SBST, between 95 participants, mean age found almost 44, with also maximum inclusion of middle-aged patients of low back pain and among them 16.8% low risk, 55.8% medium risk, 27.4% are of high-risk level. Treatment approach can vary for each category, with the help of these instruments.

Translating and validating STarT Back screening tool and Musculoskeletal Health Questionnaire in Bangla can bring great impact because of these positive outcomes, it also shows patients good acceptability and how a patient is coping up with his condition. Patients thought, their daily activities, their worries, which factors aggravating their symptoms etc. all this information can be gathered through patient's own words. If these are accurately applied these can ultimately play a major role for better management of low back pain. These questionnaires are less time consuming but proved to be effective. If it is applied appropriately, it may bring better result than expected in management program of low back pain.

## **6.2 Recommendation**

The objective of this study was translating and validating the Musculoskeletal Health Questionnaire (MSK-HQ) and STarT Back Screening Tool (SBST) into Bangla from English for low back pain patients. This study still has some limitations which could not be fulfilled because of time limitation. Some recommendation for further improvement of this study would be as follow:

This study only focused on translation and validation of the instruments, for further study on reliability can strengthen for better result.

Patients responsiveness towards these instruments can also be included

Time to complete this study was limited, this study can be better with more time.

Actual sample size for this study was 374, but because of limitation only 84 sample for MSK-HQ and 95 sample for SBST were taken, more sample can be taken later to validate the study.

This study was based on the patients who came to CRP, Savar to receive their treatment but it can be extended to many other area.

## REFERENCES

- Abedi, M., Manshadi, F., Khalkhali, M., Mousavi, S., Baghban, A., Montazeri, A. and Parnianpour., M. (2015). Translation and validation of the Persian version of the STarT Back Screening Tool in patients with nonspecific low back pain. *Manual Therapy*, 20(6):850-854.
- Acquadro, C., Conway, K., Hareendran, A., and Aaronson, N., (2008). Literature Review of Methods to Translate Health-Related Quality of Life Questionnaires for Use in Multinational Clinical Trials. *Value in Health*, 11(3):509-521.
- Aebischer, B., Hill, J., Hilfiker, R., and Karstens, S., (2015). German Translation and Cross-Cultural Adaptation of the STarT Back Screening Tool. *Public Library Of Science*, 10(7): e0132068.
- Alamam, D., Leaver, A., Moloney, N., Alsobayel, H., Alashaikh, G., and Mackey, M., (2019). Pain Behaviour Scale (PaBS): An Exploratory Study of Reliability and Construct Validity in a Chronic Low Back Pain Population. *Pain Research and Management*, (2019):1-10.
- Alexopoulos, E., Stathi, I., and Charizani, F., (2004). Prevalence of musculoskeletal disorders in dentists. *BioMed Central Musculoskeletal Disorders*, 5(1).
- Azimi, P., Shahzadi, S., Azhari, S., and Montazeri, A., (2014). A validation study of the Iranian version of STarT Back Screening Tool (SBST) in lumbar central canal stenosis patients. *Journal of Orthopaedic Science*, 19(2):213-217.
- Branco, J., Rodrigues, A., Gouveia, N., Eusebio, M., Ramiro, S., Machado, P., da Costa, L., Mourao, A., Silva, I., Laires, P., Sepriano, A., Araújo, F., Gonçalves, S., Coelho, P., Tavares, V., Cerol, J., Mendes, J., Carmona, L., and Canhao, H., (2016). Prevalence of rheumatic and musculoskeletal diseases and their impact on health-related quality of life, physical function and mental health in Portugal: results from

EpiReumaPt— a national health survey. *Rheumatic and Musculoskeletal diseases Open*, 2(1):000166.

Brooks S, P., (2004). Musculoskeletal medicine: the challenge of the Bone and Joint Decade. *APLAR Journal of Rheumatology*, 7(3):272-277.

Bruyere, O., Demoulin, M., Beudart, C., Hill, J., Maquet, D., Genevay, S., Mahieu, G., Reginster, J., Crielaard, J., and Demoulin, C., (2014). Validity and Reliability of the French Version of the STarT Back Screening Tool for Patients With Low Back Pain. *Spine*, 39(2):E123-E128

Bruyere, O., Demoulin, M., Brereton, C., Humblet, F., Flynn, D., Hill, J., Maquet, D., Van Beveren, J., Reginster, J., Crielaard, J. and Demoulin, C., (2012). Translation validation of a new back pain screening questionnaire (the STarT Back Screening Tool) in French. *Archives of Public Health*, 70(1).

Bruyere, O., Demoulin, M., Brereton, C., Humblet, F., Flynn, D., Hill, J., Maquet, D., Van Beveren, J., Reginster, J., Crielaard, J., and Demoulin, C., (2012). Translation validation of a new back pain screening questionnaire (the STarT Back Screening Tool) in French. *Archives of Public Health*, 70(1).

Buckle, P., and Jason Devereux, J., (2002). The nature of work-related neck and upper limb musculoskeletal disorders. *Applied Ergonomics*, 33(3):207-217.

Carragee, E., (2005). Persistent Low Back Pain. *New England Journal of Medicine*, 352(18):1891-1898.

Cassidy, J., Cote, P., Carroll, L., and Kristman, V., (2005). Incidence and Course of Low Back Pain Episodes in the General Population. *Spine*, 30(24):2817-2823.

Chou, R., and Shekelle, P., (2010). Will This Patient Develop Persistent Disabling Low Back Pain?. *Journal of the American Medical Association*, 303(13):1295.

da Costa, B., and Vieira, E., (2009). Risk factors for work-related musculoskeletal disorders: a systematic review of recent longitudinal studies. *American Journal of Industrial Medicine*.

Dawson, J., Doll, H., Fitzpatrick, R., Jenkinson, C., and Carr, A., (2010). The routine use of patient reported outcome measures in healthcare settings. *British Medical Journal*, 340(1):c186-c186.

DeLeo, J., and Winkelstein, B., (2002). Physiology of Chronic Spinal Pain Syndromes. *Spine*, 27(22):2526-2537.

Foster, N., Mullis, R., Hill, J., Lewis, M., Whitehurst, D., Doyle, C., Konstantinou, K., Main, C., Somerville, S., Sowden, G., Wathall, S., Young, J., and Hay, E., (2014). Effect of Stratified Care for Low Back Pain in Family Practice (IMPACT Back): A Prospective Population-Based Sequential Comparison. *The Annals of Family Medicine*, 12(2):102-111.

Fukuhara, S., Bito, S., Green, J., Hsiao, A., and Kurokawa, K., (1998). Translation, Adaptation, and Validation of the SF-36 Health Survey for Use in Japan. *Journal of Clinical Epidemiology*, 51(11):1037-1044.

Galeoto, G., Piepoli, V., Ciccone, E., Mollica, R., Federici, C., Magnifica, F., and Servadio, A., (2019). Musculoskeletal Health Questionnaire: translation, cultural adaptation and validation of the Italian version (MSK-HQ-I). *Muscle Ligaments and Tendons Journal*, 09(02):295.

Genç, A., Kahraman, T., and Goz, E., (2016). The prevalence differences of musculoskeletal problems and related physical workload among hospital staff. *Journal of Back and Musculoskeletal Rehabilitation*, 29(3):541-547.

Global Burden of Disease Study 2013 Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet* 2015, 386:743–800.

Gossec, L., de Wit, M., Kiltz, U., Braun, J., Kalyoncu, U., Scivo, R., Maccarone, M., Carton, L., Otsa, K., Sooäär, I., Heiberg, T., Bertheussen, H., Canete, J., Sanchez Lombarte, A., Balanescu, A., Dinte, A., de Vlam, K., Smolen, J., Stamm, T., Niedermayer, D., Bekes, G., Veale, D., Helliwell, P., Parkinson, A., Luger, T., and

- Kvien, T., (2014). A patient-derived and patient-reported outcome measure for assessing psoriatic arthritis: elaboration and preliminary validation of the Psoriatic Arthritis Impact of Disease (PsAID) questionnaire, a 13-country EULAR initiative. *Annals of the Rheumatic Diseases*, 73(6):1012-1019.
- Grotle, M., Brox, J., Glomsrod, B., Lonn, J., and Vollestad, N., (2007). Prognostic factors in first-time care seekers due to acute low back pain. *European Journal of Pain*, 11(3):290-298.
- Grotle, M., Brox, J., Veierod, M., Glomsrod, B., Lonn, J., and Vollestad, N., (2005). Clinical Course and Prognostic Factors in Acute Low Back Pain. *Spine*, 30(8):976-982.
- Guo, H., Chang, Y., Yeh, W., Chen, C., and Guo, Y., (2004). Prevalence of Musculoskeletal Disorder among Workers in Taiwan: A Nationwide Study. *Journal of Occupational Health*, 46(1):26-36
- Haq, S., Darmawan, J., Islam, M., Ahmed, M., Banik, S., Fazlur Rahman, A., Alam, M., Tahir, M., and Rasker, J., (2008). Incidence of musculoskeletal pain and rheumatic disorders in a Bangladeshi rural community: a WHO-APLAR-COPCORD study. *International Journal of Rheumatic Diseases*, 11(3):216-223.
- Hartvigsen, J., Natvig, B., and Ferreira, M., (2013). Is it all about a pain in the back? *Best Practice & Research Clinical Rheumatology*, 27(5):613-623.
- Hay, E., Dunn, K., Hill, J., Lewis, M., Mason, E., Konstantinou, K., Sowden, G., Somerville, S., Vohora, K., Whitehurst, D., and Main, C., (2008). A randomized clinical trial of subgrouping and targeted treatment for low back pain compared with best current care. The STarT Back Trial Study Protocol. *BioMed Central Musculoskeletal Disorders*, 9(1).
- Henschke, N., Maher, C., Refshauge, K., Herbert, R., Cumming, R., Bleasel, J., York, J., Das, A., and McAuley, J., (2008). Prognosis in patients with recent onset low back pain in Australian primary care: inception cohort study. *British Medical Journal*, 337(1): a171-a171.

- Hill, J., Dunn, K., Main, C., and Hay, E., (2010). Subgrouping low back pain: A comparison of the STarT Back Tool with the Örebro Musculoskeletal Pain Screening Questionnaire. *European Journal of Pain*, 14(1):83-89.
- Hill, J., Kang, S., Benedetto, E., Myers, H., Blackburn, S., Smith, S., Dunn, K., Hay, E., Rees, J., Beard, D., Glyn-Jones, S., Barker, K., Ellis, B., Fitzpatrick, R., and Price, A., (2016). Development and initial cohort validation of the Arthritis Research UK Musculoskeletal Health Questionnaire (MSK-HQ) for use across musculoskeletal care pathways. *British Medical Journal Open*, 6(8):012331.
- Hill, J., Vohora, K., Dunn, K., Main, C., and Hay, E., (2010). Comparing the STarT Back Screening Tool's Subgroup Allocation of Individual Patients With That of Independent Clinical Experts. *The Clinical Journal of Pain*, 26(9):783-787.
- Hoy, D., Bain, C., Williams, G., March, L., Brooks, P., Blyth, F., Woolf, A., Vos, T., and Buchbinder, R., (2012). A systematic review of the global prevalence of low back pain. *Arthritis & Rheumatism*, 64(6):2028-2037.
- Hoy, D., Brooks, P., Blyth, F., and Buchbinder, R., (2010). The Epidemiology of low back pain. *Best Practice & Research Clinical Rheumatology*, 24(6):769-781.
- Irgens, P., Lothe, L., Kvammen, O., Field, J., and Newell, D., (2013). The psychometric profile of chiropractic patients in Norway and England: using and comparing the generic versions of the STarT Back 5-item screening tool and the Bournemouth Questionnaire. *Chiropractic & Manual Therapies*, 21(1):41.
- Kinge, J., Knudsen, A., Skirbekk, V., and Vollset, S., (2015). Musculoskeletal disorders in Norway: prevalence of chronicity and use of primary and specialist health care services. *BioMed Central Musculoskeletal Disorders*, 16(1).
- Konstantinovic, L., Kanjuh, Z., Milovanovic, A., Cutovic, M., Djurovic, A., Savic, V., Dragin, A., and Milovanovic, N., (2010). Acute Low Back Pain with Radiculopathy: A Double-Blind, Randomized, Placebo-Controlled Study. *Photomedicine and Laser Surgery*, 28(4):553-560.

- Krismer, M., and van Tulder, M., (2007). Low back pain (non-specific). *Best Practice & Research Clinical Rheumatology*, 21(1):77-91.
- Levy, S., and Ahmed, T., (2018). Use of the Arthritis Research UK MSK HQ in an unselected population of attendees to a patient education event on osteoarthritis and joint pain. *Rheumatology*, 57(3).
- Luan, S., Min, Y., Li, G., Lin, C., Li, X., Wu, S., Ma, C., and Hill, J., (2014). Cross-cultural Adaptation, Reliability, and Validity of the Chinese Version of the STarT Back Screening Tool in Patients with Low Back Pain. *Spine*, 39(16): E974-E979.
- MacKay, C., Canizares, M., Davis, A., and Badley, E., (2010). Health care utilization for musculoskeletal disorders. *Arthritis Care & Research*.
- Maher, C., Underwood, M., and Buchbinder R., (2017). Non-specific low back pain. *The Lancet*, 389(10070):736-747.
- Main, C., Sowden, G., Hill, J., Watson, P., and Hay, E., (2012). Integrating physical and psychological approaches to treatment in low back pain: the development and content of the STarT Back trial's 'high-risk' intervention (StarT Back; ISRCTN 37113406). *Physiotherapy*, 98(2):110-116.
- Melloh, M., Elfering, A., Egli Presland, C., Roeder, C., Barz, T., Rolli Salathe, C., Tamcan, O., Mueller, U., and Theis, J., (2009). Identification of prognostic factors for chronicity in patients with low back pain: a review of screening instruments. *International Orthopaedics*, 33(2):301-313.
- Menezes Costa, L., Maher, C., Hancock, M., McAuley, J., Herbert, R., and Costa, L., (2012). The prognosis of acute and persistent low-back pain: a meta-analysis. *Canadian Medical Association Journal*, 184(11):E613-E624.
- Merlino, L., Rosecrance, J., Anton, D., and Cook, T., (2003). Symptoms of Musculoskeletal Disorders Among Apprentice Construction Workers. *Applied Occupational and Environmental Hygiene*, 18(1):57-64.
- Meucci, R., Fassa, A. and Faria, N. (2015). Prevalence of chronic low back pain: systematic review. *Revista de Saúde Pública*, 49(0).

- Mokkink, L., Terwee, C., Patrick, D., Alonso, J., Stratford, P., Knol, D., Bouter, L., and de Vet, H., (2010). The COSMIN checklist for assessing the methodological quality of studies on measurement properties of health status measurement instruments: an international Delphi study. *Quality of Life Research*, 19(4):539-549.
- Morso, L., Albert, H., Kent, P., Manniche, C., and Hill, J., (2011). Translation and discriminative validation of the STarT Back Screening Tool into Danish. *European Spine Journal*, 20(12):2166-2173.
- Morso, L., Albert, H., Kent, P., Manniche, C. and Hill, J. (2011). Translation and discriminative validation of the STarT Back Screening Tool into Danish. *European Spine Journal*, 20(12):2166-2173.
- Nelson, E., Eftimovska, E., Lind, C., Hager, A., Wasson, J., and Lindblad, S., (2015). Patient reported outcome measures in practice. *British Medical Journal*, 350(feb10 14):7g818-g7818.
- Norton, S., Ellis, B., Santana Suarez, B., Schwank, S., Fitzpatrick, R., Price, A., and Galloway, J., (2018). Validation of the Musculoskeletal Health Questionnaire in inflammatory arthritis: a psychometric evaluation. *Rheumatology*, 58(1):45-51.
- Norton, S., Ellis, B., Santana Suárez, B., Schwank, S., Fitzpatrick, R., Price, A., and Galloway, J., (2018). Validation of the Musculoskeletal Health Questionnaire in inflammatory arthritis: a psychometric evaluation. *Rheumatology*, 58(1):45-51.
- Omar, A., (2014). Sample size estimation and sampling techniques for selecting a representative sample. *Journal of Health Specialties*, 2(4):142
- O'Neill, T., McCabe, P., and McBeth, J., (2018). Update on the epidemiology, risk factors and disease outcomes of osteoarthritis. *Best Practice & Research Clinical Rheumatology*, 32(2):312-326.
- Ortiz-Hernández, L., Tamez-González, S., Martínez-Alcántara, S., and Méndez-Ramírez, I., (2003). Computer use increases the risk of musculoskeletal disorders among newspaper office workers. *Archives of Medical Research*, 34(4):331-342.

- Osthols, S., Bostrom, C., and Rasmussen-Barr, E., (2018). Clinical assessment and patient-reported outcome measures in low-back pain – a survey among primary health care physiotherapists. *Disability and Rehabilitation*, 41(20):2459-2467.
- Perruccio, A., Yip, C., Power, J., Canizares, M., and Badley, E., (2018). Discordance Between Population Impact of Musculoskeletal Disorders and Scientific Representation: A Bibliometric Study. *Arthritis Care & Research*, 71(1):56-60.
- Pudas-Tahka, S., Axelin, A., Aantaa, R., Lund, V., and Salanterä, S., (2013). Translation and cultural adaptation of an objective pain assessment tool for Finnish ICU patients. *Scandinavian Journal of Caring Sciences*, 28(4):885-894.
- Punnett, L., and Wegman, D., (2004). Work-related musculoskeletal disorders: the epidemiologic evidence and the debate. *Journal of Electromyography and Kinesiology*, 14(1):13-23.
- Rahman, N., Rabbani, A., Moyeenuzzaman, M., Shakoor, M.A., Hasan, M.N., Hasan, M., Chakraborty, P.K. and Islam, S.A., Translation and Validation of Functional Independence Measure in Stroke Patients for use in Bangladesh. *Comilla BMA Medical Journal*, p.9.
- Sousa, V., and Rojjanasrirat, W., (2010). Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: a clear and user-friendly guideline. *Journal of Evaluation in Clinical Practice*, 17(2):268-274.
- Sperber, A., (2004). Translation and validation of study instruments for cross-cultural research. *Gastroenterology*, 126:S124-S128.
- Stilma, W., Rijkenberg, S., Feijen, H., Maaskant, J., and Endeman, H., (2015). Validation of the Dutch version of the critical-care pain observation tool. *Nursing in Critical Care*, 24(3):132-140.
- Torgbenu, E., Nakua, E., Kyei, H., Badu, E., and Opoku, M., (2017). Causes, trends and severity of musculoskeletal injuries in Ghana. *BioMed Central Musculoskeletal Disorders*, 18(1).

Tsang, S., Royse, C., and Terkawi, A., (2017). Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine. *Saudi Journal of Anaesthesia*, 11(5):80.

Van Tulder, M., Becker, A., Bekkering, T., Breen, A., Gil del Real, M., Hutchinson, A., Koes, B., Laerum, E., and Malmivaara, A., (2006). Chapter 3 European guidelines for the management of acute nonspecific low back pain in primary care. *European Spine Journal*, 15(S2): s169-s191.

Walker-Bone, K., (2002). Musculoskeletal disorders in farmers and farm workers. *Occupational Medicine*, 52(8):441-450.

Walton, L., Brown-Cross, D., Parvin, R., and Rahman, M., 2012. Reliability and Validity of Bengali Language Short Form IIQ-7 and SF-36 for Utilization in Bangladeshi Postpartum Women. *Indian Journal of Physiotherapy and Occupational Therapy*, 6(1):51-56.

Wideman, T., Hill, J., Main, C., Lewis, M., Sullivan, M., and Hay, E., (2012). Comparing the responsiveness of a brief, multidimensional risk screening tool for back pain to its unidimensional reference standards: The whole is greater than the sum of its parts. *Pain*, 153(11): 2182-2191.

Wong, S., Chin, K., and Ima-Nirwana, S., (2019). Berberine and musculoskeletal disorders: The therapeutic potential and underlying molecular mechanisms.

Woolf, A., (2001). Understanding the burden of musculoskeletal conditions. *British Medical Journal*, 322(7294):1079-1080

## APPENDIX

কোড নংঃ

### অনুমতিপত্র

আসসালামুআলাইকুম / নমস্কার,

আমি ফাইজা বাহাউদ্দিন, আমি এই গবেষণা প্রকল্পটি বাংলাদেশ হেলথ প্রফেশন ইনস্টিটিউট (বিএইচপিআই) এ পরিচালনা করছি যা আমার ৪র্থ বর্ষ বিএসসি ইন ফিজিওথেরাপি কোর্সের অধিভুক্ত। আমার গবেষণার নাম হলো- " কোমর ব্যথা সম্পর্কিত বাছাইকৃত প্রশ্নাবলী এবং হাড় ও মাংসপেশী সমস্যা সম্পর্কিত বাছাইকৃত প্রশ্নাবলী ব্যবহার এর উপযোগিতা যাচাই" আমি এখন আপনাকে কিছু কোমর ব্যথা সম্পর্কিত এবং হাড় এবং মাংসপেশী সমস্যা সম্পর্কিত কিছু প্রশ্ন করতে চাই। এতে আনুমানিক ১০-১৫ মিনিট সময় নিবো।

আমি আপনাকে অবগত করছি যে, এটা আমার অধ্যয়নের অংশ এবং যা অন্য কোন উদ্দেশ্যে ব্যবহৃত হবে না। আপনি যেসব তথ্য প্রদান করবেন তার গোপনীয়তা বজায় থাকবে। এই অধ্যয়নে আপনার অংশগ্রহন আপনার ইচ্ছানির্ভর এবং আপনি যেকোন সময় বন্ধ করতে পারেন।

এই অধ্যয়নে অংশগ্রহণকারী হিসাবে যদি আপনার কোন প্রশ্ন থাকে তাহলে আপনি আমাকে অথবা আমার সুপারভাইজার, ফিরোজ আহমেদ মমিন, এসোসিয়েট প্রফেসর, ডিপার্টমেন্ট অব রিহ্যাবিলিটেশন সায়েন্স, কোর্স কো-অর্ডিনেটর, এম এস সি ইন ফিজিওথেরাপি প্রোগ্রাম বি এইচ পি আই, সিআরপি, সাভার, ঢাকা- ১৩৪৩ তে যোগাযোগ করতে পারেন।

সাক্ষাৎকার শুরু করার আগে কি আপনার কোন প্রশ্ন আছে?

সুতরাং, আমি আপনার অনুমতিতে এই সাক্ষাৎকার শুরু করতে পারি?

অংশগ্রহনকারীর স্বাক্ষর..... তারিখ.....

অংশগ্রহনকারীর নাম.....

উপাত্ত সংগ্রহকারীর স্বাক্ষর..... তারিখ.....

উপাত্ত সংগ্রহকারীর নাম.....

ঠিকানাঃ

গ্রামঃ

পোস্ট অফিসঃ

থানাঃ

জেলাঃ

যোগাযোগঃ

Code no-

### Informed consent

Assalamualikum, I am Faiza Bahauddin, 4<sup>th</sup> year student of B. Sc in Physiotherapy at Bangladesh Health Professions Institute (BHPI) under faculty of Medicine in University of Dhaka. To obtain my Bachelor degree, I shall have to conduct a thesis and it is a part of my study.

My thesis title is, “Translation and validation of STarT Back Screening Tool for low back pain and Musculoskeletal Health Questionnaire (MSK-HQ) for musculoskeletal disorders”. To fulfill my research project, I need to collect data. So, you can be a respected participant of my research and I would like to request you as a subject of my study. I would like to know about some personal and other related information. This will take approximately 10-15 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. Your participation in the research will have no impact on your present or future treatment. I assure that all data will be kept confidential. Your participation will be voluntary. You have the right to withdraw consent and discontinue participation at any time of the experiment.

If you have any query about the study or your right as a percipient, you may contact with me or my supervisor, Firoz Ahmed Mamin, Associate Professor, Department of Rehabilitation Science, Course Coordinator, M.Sc. in Physiotherapy Program, BHPI, CRP, Savar.

Signature of the interviewee..... Date.....

Name of the interviewee.....

Signature of the interviewee..... Date.....

Name of the researcher.....

Address:

Village

Post office

Police station

District:

Phone no:

কোড নং:

**শিরোনাম:** “ কোমর ব্যথা সম্পর্কিত এবং হাড় ও মাংসপেশী সমস্যা সম্পর্কিত প্রশ্নাবলীর ব্যবহার এর উপযোগিতা যাচাই”

**আর্থ-সামাজিক তথ্যাবলী:**

১.১. বয়স: ..... বছর

১.২. লিঙ্গ:

১=পুরুষ

২=মহিলা

১.৩. পেশা:

১=কৃষক

২=দিনমজুর

৩=চাকরিজীবী

৪=গার্মেন্টসকর্মী

৫=গাড়িচালক

৬=রিকশাচালক

৭=ব্যবসায়ী

৮=গৃহিণী

৯=ছাত্র

১০=শিক্ষক

১১=অবসরপ্রাপ্ত

১২=বেকার

১৩=.....

১.৪. বৈবাহিক অবস্থা:

১=বিবাহিত

২=অবিবাহিত

৩=বিধবা / বিপন্নিক

১.৫. পরিবারের সদস্য সংখ্যা:..... জন

১.৬. পরিবারের ধরণ:

১=একক পরিবার

২=যৌথ পরিবার

১.৭. বসবাসের এলাকা:

১=গ্রাম

২=শহর

১.৮. ধর্ম:

১=মুসলিম ২=হিন্দু ৩=খ্রিস্টান ৪=বৌদ্ধ

১.৯. শিক্ষাগত যোগ্যতা:

১=প্রাতিষ্ঠানিক শিক্ষা নেই ৫= স্নাতক

২= প্রাথমিক

৩=মাধ্যমিক

৪= উচ্চমাধ্যমিক

১.১০.মাসিক আয়:

১.১১.অন্য কোন অসুখ আছে কিনা?

১। ডায়াবেটিস ২।উচ্চ রক্তচাপ ৩।স্বাসকষ্ট ৪।হৃদরোগ ৫। .....

১.১২. ধূমপায়ী কি না - ১= হ্যা ২=না

১.১৩. কতদিন ধরে ব্যাথায় ভুগছেন? .....

১.১৪.কি কারণে ব্যথা হচ্ছে বলে আপনি মনে করেন?

১.১৫.যদি জানেন ,কিভাবে জানলেন?

Code no:

**Title:** Translation and validation of Low back pain and Musculoskeletal disorders related questionnaires

**Socio-demographic informations:**

1.1. Age:.....

1.2. Gender:

1= Male 2= Female

1.3. Occupation

1=Farmer 2=Day laborer 3=Service holder 4=Garments worker

5=Driver 6=Rickshaw puller 7=Businessman 8=Housewife

9=Student 10=Teacher 11=Retired 12=Unemployed 13=.....

1.4. Marital status:

1= Married 2= Unmarried 3=Widow

1.5. Number of family members:

1.6. Family type:

1=Neuclear family 2=Joint family

1.7. Living area:

1= Village 2= City

1.8. Religion:

1=Islam 2= Hindu 3=Christian 4=Buddhist

1.9. Educational qualifications:

1=No formal education 2=Primary

2=Secondary 4=Higher secondary 5=Graduate

1.10. Monthly income:..... taka

1.11: Any co-morbid disease:

1=Diabetes 2= High blood pressure 3=Asthma 4=Heart disease

1.12.Smoking habits:

1=Yes 2=No

1.13.Duration of pain:.....

1.14:Causes of pain:.....

1.15:Source of information:.....

নাম:

বয়স:

স্কার:

মাঙ্কুলোস্কেলেটাল হেল্থ কোয়েশেনেয়ার  
(মাংসপেশী ও হাড়ের স্বাস্থ্য সম্পর্কিত প্রশ্নাবলী)

এই প্রশ্নাবলী আপনার হাড়,কোমর,ঘাড় এবং মাংসপেশীর বিভিন্ন অসুবিধাসমূহ যেমন,ব্যথা,যন্ত্রনা এবং/অথবা শক্তভাব নিয়ে তৈরী করা হয়েছে।

অনুগ্রহপূর্বক,আপনার যে সকল শারীরিক সমস্যার জন্য আপনি চিকিৎসা নিতে চান সে সমস্যাসমূহের কথা চিন্তা করুন।

গত ২ সপ্তাহের কথা চিন্তা করে,প্রতিটি প্রশ্নের জন্য,কোন বক্তব্যটি আপনার মনের ভাব প্রকাশে সাহায্য করছে এরকম বাস্তবে টিক (✓) চিহ্ন দিন।

১) দিনের বেলায় ব্যথা/শক্তভাব

গত ২ সপ্তাহে,সারাদিনে আপনার হাড় অথবা মাংসপেশীতে ব্যথা এবং/অথবা শক্তভাব কতটা বেশী ছিল?

মোটের	না	সামান্য	মোটামুটি	মোটামুটি বেশী	অনেক বেশী				
৪	<input type="checkbox"/>	৩	<input type="checkbox"/>	২	<input type="checkbox"/>	১	<input type="checkbox"/>	০	<input type="checkbox"/>

২) রাতের বেলায় ব্যথা/শক্তভাব

গত ২ সপ্তাহে,রাতের বেলা আপনার হাড় অথবা মাংসপেশীতে ব্যথা এবং/অথবা শক্তভাব কতটা বেশী ছিল?

মোটের	না	সামান্য	মোটামুটি	মোটামুটি বেশী	অনেক বেশী				
৪	<input type="checkbox"/>	৩	<input type="checkbox"/>	২	<input type="checkbox"/>	১	<input type="checkbox"/>	০	<input type="checkbox"/>

৩) হাঁটাচলা

গত ২ সপ্তাহে,আপনার সমস্যাসমূহ হাঁটার ক্ষেত্রে কতটা অসুবিধার সৃষ্টি করেছে?

মোটের	না	সামান্য	মোটামুটি	বেশী	হাঁটতে পারি না				
৪	<input type="checkbox"/>	৩	<input type="checkbox"/>	২	<input type="checkbox"/>	১	<input type="checkbox"/>	০	<input type="checkbox"/>

৪) গোসল/জামাকাপড় পরা

এই সমস্যাসমূহ আপনার গোসলের সময় অথবা কাপড় পরার সময় গত ২ সপ্তাহে কতটা বাধার সৃষ্টি করেছে?

মোটের	না	সামান্য	মোটামুটি	বেশী	গোসল অথবা জামাকাপড় পরতে পারি না				
৪	<input type="checkbox"/>	৩	<input type="checkbox"/>	২	<input type="checkbox"/>	১	<input type="checkbox"/>	০	<input type="checkbox"/>

#### ৫) শারীরিক কাজকর্মের পরিমাণ

আপনার চাহিদার তুলনায় গত ২ সপ্তাহে আপনার হাড় অথবা মাংসপেশীর সমস্যাসমূহ শারীরিক কাজকর্মে (যেমনঃহাঁটতে যাওয়ার সময় অথবা জগিং এর সময়) কতটা বাধার সৃষ্টি করেছে?

মোটঃ	না	সামান্য	মোটামুটি	অনেক বেশী	শারীরিক কাজকর্ম করতে পারি না
৪ <input type="checkbox"/>		৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>

#### ৬) কাজ/ দৈনিক কাজকর্ম

গত ২ সপ্তাহে আপনার হাড় অথবা মাংসপেশীর সমস্যাসমূহের কারণে চাকুরীক্ষেত্রে অথবা দৈনিক কাজকর্মে কতটা বাধার সৃষ্টি করেছে? (চাকুরী এবং ঘরের কাজকর্ম সহ?)

মোটঃ	না	সামান্য	মোটামুটি	বেশী	মাত্রাতিরিক্ত
৪ <input type="checkbox"/>		৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>

#### ৭) অবসর সময়ে কাজ

গত ২ সপ্তাহে আপনার হাড় এবং মাংসপেশীর সমস্যাসমূহের কারণে অবসর সময়ের কাজকর্মে কতটা অসুবিধার সৃষ্টি হয়েছে?

মোটঃ	না	সামান্য	মোটামুটি	বেশী	মাত্রাতিরিক্ত
৪ <input type="checkbox"/>		৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>

#### ৮) সাহায্যের প্রয়োজন

গত ২ সপ্তাহে, আপনার হাড় অথবা মাংসপেশীর সমস্যাসমূহের কারণে অন্য কারোর সাহায্য কতবার প্রয়োজন হয়েছে? (পরিবার, বন্ধুবান্ধব অথবা সাহায্যকারী সহ)

মোটঃ	না	অল্প	মাঝে মাঝে	ঘন ঘন	সবসময়
৪ <input type="checkbox"/>		৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>

#### ৯) ঘুম

গত ২ সপ্তাহে আপনার হাড় অথবা মাংসপেশীর সমস্যাসমূহের কারণে ঘুমের কতটা অসুবিধা হয়েছে? (ঘুমানোর সময় অথবা ঘুমিয়ে থাকা অবস্থায়)

মোটঃ	না	অল্প	মাঝে মাঝে	ঘন ঘন	প্রতিরাত্তে
৪ <input type="checkbox"/>		৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>

#### ১০) ক্লান্তি অথবা দুর্বলতা

গত ২ সপ্তাহে আপনি কতটা ক্লান্ত অথবা দুর্বলতা অনুভব করেছেন?

মোটঃ	না	সামান্য	মোটামুটি	বেশী	মাত্রাতিরিক্ত
৪ <input type="checkbox"/>		৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>

**১১) মানসিক সুস্থতা**

গত ২ সপ্তাহে আপনার হাড়ের অথবা মাংসপেশীর সমস্যাসমূহের কারণে কতটা দুশ্চিন্তা করেছেন?

মোট ০	না	সামান্য	মোটামুটি	বেশী	মাত্রাতিরিক্ত
৪ <input type="checkbox"/>	৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>	

**১২) আপনার বর্তমান অবস্থা এবং বর্তমান চিকিৎসা বুঝতে পারা**

আপনার হাড়ের অথবা মাংসপেশীর সমস্যাসমূহের কথা চিন্তা করে নিজের বর্তমান অবস্থা এবং চিকিৎসা সম্পর্কে কতটা বুঝতে পারেন বলে মনে করেন?

পুরোপুরি	অনেক ভালো	মোটামুটি	সামান্য	মোট ০	না
৪ <input type="checkbox"/>	৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>	

**১৩) সমস্যাসমূহ নিয়ে আত্মবিশ্বাসের সাথে মানিয়ে চলা**

গত ২ সপ্তাহে আপনার হাড় অথবা মাংসপেশীর সমস্যাসমূহ নিয়ে মানিয়ে চলার ক্ষেত্রে আপনি কতটা আত্মবিশ্বাসী?

মাত্রাতিরিক্ত	বেশী	মোটামুটি	সামান্য	মোট ০	না
৪ <input type="checkbox"/>	৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>	

**১৪) সবমিলিয়ে প্রভাব**

গত ২ সপ্তাহে আপনার হাড় অথবা মাংসপেশীর সমস্যাসমূহ সবকিছু মিলিয়ে আপনাকে কতটা যন্ত্রনা দিয়েছে?

মোট ০	না	সামান্য	মোটামুটি	বেশী	মাত্রাতিরিক্ত
৪ <input type="checkbox"/>	৩ <input type="checkbox"/>	২ <input type="checkbox"/>	১ <input type="checkbox"/>	০ <input type="checkbox"/>	

**শারীরিক ব্যায়ামের পরিমাণ**

গত সপ্তাহে, আপনি কি ৩০ মিনিটের মতো শারীরিক ব্যায়াম করেছেন যা আপনার হার্ট রেট বাড়িয়ে দিয়েছে? এটা হতে পারে খেলাধুলা, ব্যায়াম এবং ঘোরাঘুরি অথবা সাইকেল চালানোর সময় (ঘরের দৈনন্দিন কাজকর্ম এবং চাকুরীক্ষেত্রের কাজ শারীরিক ব্যায়ামের অন্তর্ভুক্ত নয়)

একদিন ও নয়	১ দিন	২ দিন	৩ দিন	৪ দিন	৫ দিন	৬ দিন	৭ দিন
<input type="checkbox"/>							

Name:

Age:

Score:

### MUSCULOSKELETAL HEALTH QUESTIONNAIRE

This questionnaire is about your joint, back, neck, bone and muscle symptoms such as aches, pains and/or stiffness.

Please focus on the particular health problem(s) for which you sought treatment from this service.

For each question tick (✓) one box to indicate which statement best describes you over the last 2 weeks.

#### 1. Pain/stiffness during the day

How severe was your usual joint or muscle pain and/or stiffness overall during the **day** in the last 2 weeks?

	Not at all	Slightly	Moderately	Fairly severe	Very severe
4	<input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

#### 1. Pain/stiffness during the night

How severe was your usual joint or muscle pain and/or stiffness overall during the **night** in the last 2 weeks?

	Not at all	Slightly	Moderately	Fairly severe	Very severe
4	<input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

#### 3. Walking

How much have your symptoms interfered with your ability to wash or dress yourself in the last 2 weeks?

	Not at all	Slightly	Moderately	Fairly severe	Unable to walk
4	<input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

#### 4. Washing/Dressing

How much have your symptoms interfered with your ability to walk in the last 2 weeks?

	Not at all	Slightly	Moderately	Fairly severe	Unable to wash or dress myself
4	<input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**5. Physical activity levels**

How much has it been a problem for you to do physical activities(e.g.going for a walk or jogging) to the level you want because of your joint or muscle symptoms?

Not at all	Slightly	Moderately	Very much	Unable to do physical activities
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**6. Work/daily routine**

How much have your joint or muscle symptoms interfered with your work or daily routine in the last 2 weeks(including work & jobs around the house)?

Not at all	Slightly	Moderately	Severely	Extremely
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**7. Social activities and hobbies**

How much have your joint or muscle symptoms interfered with your social activities and hobbies in the last 2 weeks?

Not at all	Slightly	Moderately	Severely	Extremely
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**8. Needing help**

How often have you needed help from others(including family, friends or carers) because of your joint or muscle symptoms in the last 2 weeks?

Not at all	Rarely	Sometimes	Frequently	All the time
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**9. Sleep**

How often have you had trouble with either falling asleep or staying asleep because of your joint or muscle symptoms in the last 2 weeks?

Not at all	Rarely	Sometimes	Frequently	Every night
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**10. Fatigue or low energy**

How much fatigue or low energy have you felt in the last 2 weeks?

Not at all	Slight	Moderate	Severe	Extreme
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**11. Emotional well-being**

How much have you felt anxious or low in your mood because of your joint or muscle symptoms in the last 2 weeks?

Not at all	Slightly	Moderately	Severely	Extremely
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**12. Understanding of your condition and any current treatment**

Thinking about your joint or muscle symptoms, how well do you feel you understand your condition and any current treatment(including your diagnosis and medication)

Completely well	Very well	Moderately	Slightly	Not at all
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**13. Confidence in being able to manage your symptoms**

How confident have you felt in being able to manage your joint or muscle symptoms by yourself in the last 2 weeks(e.g. medication, changing lifestyle)?

Extremely	Very	Moderately	Slightly	Not at all
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**14. Overall impact**

How much have your joint or muscle symptoms bothered you overall in the last 2 weeks?

Not at all	Slightly	Moderately	Very much	Extremely
4 <input type="checkbox"/>	3 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	0 <input type="checkbox"/>

**Physical activity levels**

In the past week, on how many days have you done a total of 30 minutes or more of physical activity, which was enough to raise your heart rate? This may include sport, exercise and brisk walking or cycling for recreation or to get to and from places but should not include housework or physical activity that is part of your job.

None	1 day	2 days	3 days	4 days	5 days	6 days	7 days
<input type="checkbox"/>							

## দি কিল্ স্টাট ব্যাক স্ক্রিনিং টুল

রোগীর নাম:

তারিখ:

গত ২ সপ্তাহের কথা চিন্তা করে নীচের প্রশ্নগুলোর উত্তরের পাশে টিক(✓) চিহ্ন দিন।

	একমত নই ০	একমত ১
১) গত ২ সপ্তাহে আমার কোমরের ব্যথা মাঝে মাঝে পায়ে নেমে এসেছে।	<input type="checkbox"/>	<input type="checkbox"/>
২) গত ২ সপ্তাহে মাঝে মাঝে আমার কাঁধে অথবা ঘাড়ে ব্যথা হয়েছিল।	<input type="checkbox"/>	<input type="checkbox"/>
৩) আমার কোমরের ব্যথার কারণে আমি হাঁটারহাঁটি কম করেছি।	<input type="checkbox"/>	<input type="checkbox"/>
৪) গত ২ সপ্তাহে, কোমরে ব্যথার কারণে আমি জামাকাপড় আগের চেয়ে ধীরে পরেছি।	<input type="checkbox"/>	<input type="checkbox"/>
৫) আমার মতো শারীরিকভাবে অসুস্থ মানুষের জন্য কাজ করা ঝুঁকিপূর্ণ।	<input type="checkbox"/>	<input type="checkbox"/>
৬) বেশির ভাগ সময়ই আমি দুশ্চিন্তা করি।	<input type="checkbox"/>	<input type="checkbox"/>
৭) মনে হয়, আমার কোমরের ব্যথা খুবই বেশি এবং এটা কখনোই ভাল হবে না।	<input type="checkbox"/>	<input type="checkbox"/>
৮) যে জিনিসগুলো আগে আমার ভাল লাগত সেই জিনিসগুলো আর ভাল লাগে না।	<input type="checkbox"/>	<input type="checkbox"/>

৯) সবমিলিয়ে, গত ২ সপ্তাহে কোমরের ব্যথার কারণে আপনি কতটা বিরক্ত ছিলেন?

মোটোও না ০ <input type="checkbox"/>	খুব অল্প ০ <input type="checkbox"/>	মোটামুটি ০ <input type="checkbox"/>	অনেক বেশী ১ <input type="checkbox"/>	মাত্রাতিরিক্ত ১ <input type="checkbox"/>
----------------------------------------	----------------------------------------	----------------------------------------	-----------------------------------------	---------------------------------------------

মোট স্কোর(পুরো ৯ টা) -

আংশিক স্কোর(প্রশ্ন ৫-৯) -

## The Keele STarT Back Screening Tool

Patient name:

Date:

Thinking about the last 2 weeks tick (√) your response to the following questions

	Disagree 0	Agree 1
1. My back pain has <b>spread down my leg(s)</b> at some time in the last 2 weeks	<input type="checkbox"/>	<input type="checkbox"/>
2. I have had pain in the <b>shoulder</b> or <b>neck</b> at some time in the last 2 weeks	<input type="checkbox"/>	<input type="checkbox"/>
3. I have only <b>walked short distances</b> because of my back pain	<input type="checkbox"/>	<input type="checkbox"/>
4. In the last 2 weeks, I have <b>dressed more slowly</b> than usual because of back pain	<input type="checkbox"/>	<input type="checkbox"/>
5. It's not really safe for a person with a condition like mine to be physically active	<input type="checkbox"/>	<input type="checkbox"/>
6. <b>Worrying thoughts</b> have been going through my mind a lot of the time.	<input type="checkbox"/>	<input type="checkbox"/>
7. I feel that my <b>back pain is terrible</b> and it's <b>never going to get any better</b>	<input type="checkbox"/>	<input type="checkbox"/>
8. In general I have <b>not enjoyed</b> all the things i used to enjoy	<input type="checkbox"/>	<input type="checkbox"/>

9. Overall, how bothersome has your back pain been in the last 2 weeks?

Not at all	Slightly	Moderately	Very much	Extremely
0 <input type="checkbox"/>	0 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>

Total score(all 9)-

Sub Score (Q5-9)-

May 23, 2019

Head of the Department,

Department of Physiotherapy,

Center for the Rehabilitation of the Paralyzed (CRP), Chapain, Savar, Dhaka-1343

**Through:** Head of the Department, Department of Physiotherapy,  
Bangladesh Health Professions Institute (BHPI).

**Subject: Seeking permission for data collection.**

Dear Sir,

With due respect and humble submission to state that, I am Faiza Bahauddin, student of 4<sup>th</sup> professional B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). In 4<sup>th</sup> year we have to do a research project and my research project entitled on **"Translation and validation of the STarT Back screening tool for low back pain and Musculoskeletal Health Questionnaire (MSQ-HQ) for musculoskeletal disorders."** To conduct this research, I want to collect data from the patients with low back pain and patients with musculoskeletal disorders who are taking their rehabilitation treatment from CRP. So, I need permission for data collection from CRP. I would like to assure that anything of my study will not be harmful for the participants.

I, therefore, pray and hope that you would be kind enough to grant my application and oblige thereby.

Sincerely Yours,

Faiza Bahauddin  
Faiza Bahauddin

Student of 4<sup>th</sup> professional B.Sc. in physiotherapy

Roll no: 31, Session: 2014-2015

Bangladesh Health Profession Institute (BHPI)

(An academic institute of CRP)

CRP, Chapain, Savar, Dhaka-1343.

Forwarded  
Fy  
23.5.19

Approved  
Mohammad Arwar Hossain  
Associate Professor & Head  
Physiotherapy Dept., CRP  
Chapain, Savar, Dhaka-1343

Recommended  
23.05.19

Prof. Md. Obaidul Haque  
Head, Department of Physiotherapy,  
Bangladesh Health Professions Institute (BHPI)  
CRP, Savar, Dhaka-1343

Firoz Ahmed Mamin  
Associate Professor  
of Rehabilitation Science  
Coordinator  
Sc. in Physiotherapy Program  
(MSQ-HQ), CRP, Savar, Dhaka-1343



বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)  
BANGLADESH HEALTH PROFESSIONS INSTITUTE (BHPI)  
(The Academic Institute of CRP)  
CRP-Chapain, Savar, Dhaka-1343. Tel: 02-7745464-5, 7741404

Ref: CRP-BHPI/IRB/09/19/1331

Date: 17/09/2019

To  
Faiza Bahauddin  
B.Sc. in Physiotherapy  
Session: 2014-2015, Student ID:112140263  
BHPI, CRP, Savar, Dhaka-1343, Bangladesh.

**Subject:** Approval of the thesis proposal “**Translation and validation of the STarT Back screening tool for low back pain and Musculoskeletal Health Questionnaire (MSK-HQ) for musculoskeletal disorders**” by ethics committee.

Dear Faiza Bahauddin,

Congratulations,

The Institutional Review Board (IRB) of BHPI has reviewed the above-mentioned dissertation, with you, as the Principal investigator. The Following documents have been reviewed and approved:

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

The purpose of this study is to formally translate and validate the STarT Back screening tool for low back pain and Musculoskeletal Health Questionnaire (MSK-HQ) for musculoskeletal disorders into Bangla from English. The participant may take 10 to 15 minutes to answer the questionnaire during validation process. There is no likelihood of any harm to the participants. Data collectors will receive informed consents from all participants. Any data collected will be kept confidential. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 10 AM on 11<sup>th</sup> August 2018 at BHPI.

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

Best regards,

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

