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University of Dhaka**

**Influence of Anxiety, Depression and Stress on physiotherapy
Treatment Outcome for the patients with Low Back Pain attended at
the Centre for the rehabilitation of the paralyzed (CRP), Savar**

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“Influence of Anxiety, Depression and Stress on physiotherapy Treatment Outcome for the patients with Low Back Pain attended at the Centre for the rehabilitation of the paralyzed (CRP), Savar”

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DECLARATION

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

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Acknowledgement

All the praise must go to Almighty Allah. At first I would like to express my gratitude to my parents who provided me a lot of encouragement to complete this study. I also gratefully acknowledge the untiring and tolerant supervision and encouragement of my supervisor **Fabiha Alam**, Associate Professor, Department of Physiotherapy, BHPI, CRP. I remain ever grateful to her for her guidance and support without which I could not have come to this stage. I again would like to pay my gratitude to her, for giving me the permission to start this study and providing me support. May Allah bless her.

I would like to express my gratitude to **Professor Md. Obaidul Haque**, Head of the Department of physiotherapy, Vice Principal, BHPI, CRP, Savar for recommend me to begin the study procedure and for giving me the courageous to conduct the study.

Also, it's my honor to mention **Dr. Mohammad Anwar Hossain**, Associate Professor of Physiotherapy, BHPI, Senior Consultant & Head of the Department of Physiotherapy, CRP for given me permission to collect my data from Musculoskeletal Unit, Department of Physiotherapy, CRP and **Md. Shofiqul Islam**, Assistant Professor, Department of Physiotherapy for his valuable advice, support and guide to conduct this research. I can't

I am indebted to **Chowdhury Muhsinin Mosharofy Aroshi** and specially thanks to **Mr. Nazmul Hossain** and **Akter Hossain** for helping me throughout the study. I would like to thanks all of my friends and those entire individuals who are directly or indirectly involve with this study.

I also pay my thanks to the Library Assistant Anisur Rahman who helps me to find out books for collecting literature of the study & other staff for providing resources. I would like to thank the participants of the research for giving me their valuable time. All of my gratitude is towards Allah.

Acronyms

LBP	: Low back pain
DASS	: Depression, anxiety and stress scale
BHPI	: Bangladesh Health Profession Institute
BMRC	: Bangladesh Medical Research Council
CRP	: Centre for the Rehabilitation of the Paralysed
IRB	: Institutional Review Board
WHOQOL	: WHO quality of life
WHO	: World Health Organization
VAS	: Visual analogue scale

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ABSTRACT

Purpose: The purpose of this study to screen out the influence of depression, anxiety and stress with the LBP patients on physiotherapy treatment outcome. **Objectives:** The objectives of this study to evaluate the level of depression, anxiety and stress among the participants having LBP, to know the association in between DASS and intensity of pain and QOL. Objectives also were to find out the socio- demographic status. **Methodology:** The cross sectional study was chosen to carry out this study among 105 participants who were selected according to inclusion criteria. The “Depression, anxiety and stress scale (DASS)” and “WHOQOL-BREF questionnaire”, this two standard structured questionnaires were used to assess the influence of depression, anxiety and stress among 105 participants. The study was conducted by using quantitative descriptive analysis. **Results:** Among 105 participants, 54.2% of patients with depression, 88.6% of those with anxiety disorders and 84.8% of those with stress disorders. Although this study found a significant association with depression, anxiety and stress and pain, quality of life and the p value is 0.00 which is highly significant. **Conclusion:** The findings of this study revealed that LBP and psychological issues are related to each other. A notable number of patients had anxiety, depression and stress. Moreover, depression, anxiety and stress was associated with quality of life and pain. Therefore, these findings acknowledge the importance of psychological assessment and treatment, in addition to biomedical aspects when managing patients with LBP.

Key words: Low back pain, Depression, Anxiety, Stress, Physiotherapy treatment outcome.

1.1 Background

Low back pain is pain, muscle tension, or stiffness localized below the costal margin and above the inferior gluteal folds, with or without sciatica, and is defined as chronic when it persists for 12 weeks or more. Nonspecific low back pain is pain not attributed to a recognizable pathology (e.g., infection, tumor, osteoporosis, rheumatoid arthritis, fracture, inflammation) (Guruprasad et al., 2015). Low back pain (LBP) is an increasing economic and health problem affecting nearly 80% of the general population (Wedderkopp et al., 2001). Mechanical low back pain is the general term that refers to any type of back pain caused by strain on muscles of the vertebral column and abnormal stress. (Guruprasad et al., 2015). Low back pain (LBP) affects 22% to 65% of people worldwide, ranking in the top 7 most common reasons for consulting a general practitioner in Australia and the United States (Hall et al., 2011).

If a person experiences difficulty in the lower back region, especially below the medial margin and in the inferior gluteal folds, then it is called low back pain (LBP) (Koes et al., 2006). LBP has been regarded as one of the major causes of disability worldwide (Buchbinder et al., 2013) Chronic LBP (CLBP) occurs when the LBP persists for more than the period of 12 weeks and more (Hartvigsen et al., 2018). Recent studies, which were conducted in the general population, have shown about 84% lifetime prevalence of LBP, 23% of CLBP, and 12% of LBP with a major disability (Balagué et al., 2012). It has been often observed that the prevalence of LBP is directly proportional to age as there are reduced physical activities as the age factor increases (Hartvigsen et al., 2018).

Low back pain (LBP) is an increasing economic and health problem. LBP, a leading cause of disability, has a significant economic impact not only on lost productivity, but also on health care expenditure. LBP is ranked first as a cause of disability and inability to work, and is expected to affect most adults at some point during their lifetime. It is a symptom commonly presented to general practitioners.

It is an important clinical and public health problem, and is the most common illness among humans after the common cold (Abdulbari Bener et al., 2013). LBP, a leading cause of disability, has a significant economic impact not only on lost productivity, but also on health care expenditure. LBP is ranked first as a cause of disability and inability to work, and is expected to affect most adults at some point during their lifetime (Bener et al., 2004). Due to its medical, social, and financial importance, Low Back Pain (LBP) is an important concern of the medical world. It was reported that the risk of LBP increases rapidly with greater amounts of physical work and psychological distress (Abdulbari Bener et al., 2013). It is a symptom commonly presented to general practitioners. It is an important clinical and public health problem, and is the most common illness among humans after the common cold. LBP is the most prevalent form of chronic musculoskeletal pain worldwide, often leading to disability (Walker et al., 2004).

It was reported that LBP can have a substantial negative impact on quality of life and that psychological distress is common in patients with LBP. The hypothesis is that subjects exhibiting excessive pain complaints would be more depressed than those who do not exhibit excessive levels of pain complaints. There is evidence that psychosocial difficulties and psychological factors might be associated with LBP (Abdulbari Bener et al., 2013). Physical pain and depression have a deeper biological connection than simple cause and effect; the neurotransmitters that influence both pain and mood are serotonin and norepinephrine. Dysregulation of these transmitters is linked to both depression and pain (Guruprasad et al., 2015).

Depression is a condition that worsens the prognosis of low back pain (LBP) and is under-recognized and undertreated in primary care. Depression is common in patients with low back pain (LBP) and is associated with increased pain intensity, increased physical and psychosocial disability, increased medication use, and increased likelihood of unemployment. Although it is not yet clear whether the depression is the cause or result of the LBP, it is clear that the presence of depression is associated with poor outcomes. Unmanaged depression is expensive, costing

billions of dollars in terms of lost productivity in the workplace and resulting in increased use of medical resources (Haggman et al., 2004).

A previous study by Bener et al reported that depression and somatization were very common in LBP patients (Bener et al., 2006). Also, a recent study observed a high rate of comorbidity of somatization, depression, anxiety, and stress in the studied population and indicated a strong association between these psychological disorders in patients (Bener et al., 2012). Considering the results of these two studies, the authors understood the importance of focusing on LBP issues in the general population of Qatar and exploring the potential psychological differences between patients with and without LBP. Hence, the purpose of this study was to determine the prevalence of LBP and sociodemographic characteristics of LBP patients and examine its association with psychological distress such as anxiety, depression, and somatization (Abdulbari Bener et al., 2013).

Therefore, to assess psychological symptoms the DASS 21 SCALE is used in this study. The DASS-21, short -form of the Depression, Anxiety and Stress scales (DASS), was used that measures the 3 negative affective states of depression, anxiety, and stress. Moreover, individuals suffering from depression commonly report symptoms of anxiety, that is, feelings of worry, nervousness, or unease. For instance, the Netherlands Study of Depression and Anxiety showed that of the people who presented with depression, 67% had a current anxiety disorder, whereas among those who presented with anxiety, 63% had a current depressive disorder (Lamers et al., 2011). Those who suffer LBP are more likely to suffer from depression or anxiety compared with non-LBP sufferers. A number of prevalence studies have identified this relationship, including a recent study of the general population of Qatar, where the prevalence of depression (13.7% vs. 8.5%) and anxiety disorders (9.5% vs. 6.2%) was higher in those with LBP compared with those without LBP (Abdulbari Bener et al., 2013).

Similarly, men with long-standing chronic LBP reported higher lifetime prevalence rates of depression (32% vs. 16%) and anxiety (30.9% vs. 14.3%) disorders over those not reporting chronic LBP (Atkinson et al., 1991). However, few studies exist

in regard to the risk of future depression and anxiety caused by chronic LBP. Adults from a Dutch population aged between 18 and 65 years who self-reported chronic LBP lasting longer than 3 months were at risk of developing depression or anxiety disorders (t Land et al., 2011). Anxiety with depression is associated with chronic pain (Bair et al., 2008) and both are known to negatively impact treatment (Kroenke et al., 2011), reduce quality of life, and increase societal cost (Gameroff & Olfson, 2006).

Epidemiological research suggests that environmental stressors as experienced on the job and in the family are associated with recurrent and chronic low back pain (Nagi et al., 1973). LBP occurs at all ages and has a significant impact on the quality of life of children and adolescents (Roth-Isigkeit et al., 2005). The patients with low back pain (LBP) not only suffer from physical discomfort, but also functional limitation that might cause disability and interfere with their quality of life. This problem cannot be overemphasized because of the increasing number and cost of the compensated cases with LBP in recent years, and its economic impact is substantial in terms of its contribution to total health costs and back-related disability costs imposed on employers and government insurance programs (Webster & Snook, 1990).

1.2 Rationale

Low back pain (LBP) is one of the major complain among working adult. Influence of depression, anxiety and stress are extreme over LBP. Whenever a person has LBP he/she suffers various dimensional problems that crisp his/her daily activities also with emotional distress and depression.

Prolong standing and sitting poor posture, extensive load on lumbar vertebrae that causes extensive pressure on vertebral column and all these things happens from lack of knowledge about correct postural alignment among the people. Degree of long term disability due to low back pain has been predicted by chronic depression, anxiety, mood swing, demoralization, discouragement.

Suffering from LBP causes functional impairment that affects the scope of everyday activities, impacting quality of life. Those bring individual experiencing depressive symptoms, anxiety and stress.

The study was to find out about influence of depression, anxiety and stress for the patients with low back pain on the physiotherapy treatment outcome attended at CRP. As we know persons who are sufferings from LBP or any musculoskeletal pain has great influence on experiencing depression, anxiety and stress. Therefore, researcher wished to find out the specific influence of depression, anxiety and stress on the physiotherapy treatment outcome among people who were suffering from LBP.

1.3 Research Question

Is there any influence of anxiety, depression and stress on physiotherapy treatment outcome for the patients with low back pain attended at the Centre for the rehabilitation of the Paralyzed (CRP), Savar?

1.4 Objectives

General objective

To find out the influence of anxiety, depression and stress on physiotherapy treatment outcome for the patients with low back pain attended at the Centre for the rehabilitation of the Paralyzed (CRP), Savar.

Specific objectives

1. To find out the socio-demographic status on low back pain.
2. To measure the relationship with anxiety, depression and stress on low back pain patients.
3. To find out the prevalence of anxiety, depression and stress among the patients suffering with low back pain.
4. To evaluate the quality of life of the patients with low back pain suffering with along with anxiety, depression and stress.
5. Relationship between DASS and intensity of pain.

1.5 Conceptual Framework

Independent Variables

Socio-demography
(age, sex, Occupation, education)

Anxiety

Depression

Stress



Dependent Variables

Low Back Pain

PT Treatment Outcome

Reduction of pain severity

Functional mobility

Quality of Life

1.6 Operational Definition

Low back Pain (LBP)

Low back pain is pain, muscle tension, or stiffness localized below the costal margin and above the inferior gluteal folds. Pain can range from mild to severe. In some cases, pain can make it difficult or impossible to walk, sleep, work or do everyday activities. If a person experiences difficulty in the lower back region, especially below the medial margin and in the inferior gluteal folds, then it is called low back pain (LBP)

Depression

Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration. Moreover, depression often comes with symptoms of anxiety. These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities. At its worst, depression can lead to suicide. Almost 1 million lives are lost yearly due to suicide, which translates to 3000 suicide deaths every day. For every person who completes a suicide, 20 or more may attempt to end his or her life.

DASS (Depression, Anxiety and Stress scale)

The Depression, Anxiety and Stress scale (DASS-21) is a set of 3 self-report scales designed to measure symptoms of psychological distress including depression, anxiety, and stress. The Depression scale assesses low positive affect, loss of self-esteem and incentive, and sense of hopelessness. The Anxiety scale assesses autonomic arousal and fearfulness (physiological hyperarousal). The Stress scale assesses difficulty relaxing, persistent tension, irritability, and low threshold for becoming upset or frustrated. Each of the 3 scales contains 7 items that can be summed to represent a composite measure of negative emotional symptoms or psychological distress.

WHOQOL-BREF

The WHO Quality of life-BREF is a 26-item questionnaire that measures an individual quality of life. This particular measure is designed to work across cultures, which assesses 4 domains of quality of life (QOL): physical health, psychological health, social relationships and environment.

Anxiety

anxiety is an emotional state that is characterized by physiological arousal, unpleasant feelings of tension, and concerns about bad things happening in the future. From another perspective, anxiety can also be viewed as a great force in motivating people to engage in various behaviors, including deviant and disturbing ones. Anxiety is a part of normal human reactions to stressful situations and to real or imaginary threats (phobias) caused by uncertainty.

Stress

Stress is where a person feels threatened by or under pressure from a particular situation and their body reacts accordingly. Hormones are released to prepare the body for action. The heartbeat increases and blood pressure rises. More blood is sent to the heart and the major muscles and is diverted away from “less important” areas such as the digestive system hence, the nausea that is often experienced during stress.

Vas scale (Visual analogue scale)

The visual analog scale for pain is a straight line with one end meaning no pain and the other end meaning the worst pain imaginable. A patient marks a point on the line that matches the amount of pain he or she feels. It may be used to help choose the right dose of pain medicine. Also called VAS.

A variety of recognized or undiagnosed disorders or diseases can cause low back discomfort, which is a symptom rather than a condition. It is identified by the area of pain, which is commonly between the buttock creases and the lower rib borders (Dionne et al., 2008). People of all ages frequently complain of having low back pain (Hoy et al., 2012). 540 million people were estimated to experience activity-limiting low back pain at any given time in 2015, according to the global point prevalence rate of 73%. Currently, the leading cause of disability worldwide is low back pain (Vos et al., 2016).

Chronic low back pain can be caused by catastrophic conditions including cancer, spinal fractures, infections, or inflammatory diseases like axial spondyloarthritis), but these represent a very tiny percentage of instances. These conditions necessitate identification and particular management aimed at the etiology. When compared to persons who do not report low back pain, those who do frequently experience concomitant pain in other body regions and more widespread physical and mental health issues. The underlying causes of low back pain were identified, but four primary contributory reasons (disc, sciatica, lifting, and injury) as well as one indirect link between lifting and injury were also identified (Campbell & Muncer, 2005).

The diagnostic process is primarily focused on triaging patients with specific or nonspecific low back pain. Specific low back pain is defined as symptoms caused by specific pathophysiological mechanisms such as: B. Medullary herniated nucleus, infection, osteoporosis, rheumatoid arthritis, fracture or tumor. A U.S. study found that among low back pain patients receiving primary care, 4% had compression fractures, 3% had spondylolisthesis, 0.7% had tumors or metastases, 0.3% had ankylosing spondylitis, and 0.01% had infection (Koes et al., 2006). During pregnancy low back pain is the most observed symptom. Respecting 50% of pregnant women grow low back ache (FAST et al., 1990).

Chronic LBP is a complex, heterogeneous condition, where both nociceptive and neuropathic pain mechanisms may be involved. In LBP, nociceptive pain results from activation of nociceptors that innervate ligaments, joints, muscles, fascia and tendons as a response to tissue injury or inflammation and biomechanical stress. Neuropathic back pain describes pain arising from injury or disease directly affecting the nerve roots that innervate the spine and lower limbs, and pathological invasive innervation of the damaged lumbar discs. Chronic LBP is increasingly considered to be a mixed pain syndrome consisting of both nociceptive and neuropathic components (Treede et al., 2007).

In a review of sixteen research articles, Linton (2000) reported that in 14 studies revealed that, mental distress increased the risk for developing back pain (Bento et al., 2020).

One of a study also found that a significant number of patients with LBP had mental distress among 360 patients of LBP, 6.7% of patients had depression, 37.7% had anxiety, and 46.4% had stress (Azfar et al., 2019). These findings are parallels to the findings of another current study, which showed higher mental distress among LBP patients as compared to the control group in which Altogether, 766 patients with LBP and 909 participants in the reference group were included (Christensen et al., 2015). An another study conducted with 50 study sample 35 people suffer from chronic mechanical low back pain and 15 suffer from acute mechanical low back pain. According to the DASS 21 rating for depression, anxiety and stress around 10% have severe depression, 24% suffer from severe anxiety and 22% suffer from severe stress. Pain can cause depression or make existing depression worse. Depression can also make existing pains worse. Anxiety can cause people to change their behaviors and posture, including the way they sit, what they do when they sit, whether they slouch, and so on. Changes in posture – especially when combined with the muscle tension from anxiety – can cause the muscles to be in uncomfortable positions and ultimately lead to back pain (Guruprasad et al., 2015).

In japan of the participants surveyed, 425 were identified as having chronic low back pain. The average age of a respondent with chronic low back pain was 54 years old, and 44 % were female. When assessed according to depression status, chronic low

back pain patients with depression (PHQ-9 \geq 10; N = 70) were younger than chronic low back pain patients without depression (PHQ-9 < 10; N = 355) by approximately 9 years on average. The majority of patients had mild (47 %) or moderate (44 %) LBP. Current and prior week pain severity scores were similar (4.6/10 vs 4.5/10) and almost half of all patients reported daily pain problems. Depression was significantly associated with more severe pain and higher levels of pain prevalence of (0.002) (Tsuji et al., 2016). Epidemiological research suggests that environmental stressors as experienced on the job and in the family are associated with recurrent and chronic low back pain (Feuerstein et al., 1987).

It is possible that mood is most related to pain following the pain episode. Such a relationship was reported in patients with osteoarthritis of the hip (Lunghi et al., 1978). (Feuerstein et al., 1985) Work pressure was associated with decreased depression and less pain. These findings suggested the presence of both stress and operant mechanisms in the modulation of pain in the family, while operant and distraction mechanisms appear to characterize the relationship among work environment factors and pain. The data were collected Subjects included 33 ambulatory patients, 17 males and 16 females, diagnosed with chronic mechanical low back pain with or without objective physical findings as determined by an orthopedic specialist, and 35 healthy controls. All subjects had medical evaluations within the previous 8 months. (Feuerstein et al., 1985) found that Multivariate Hotelling T^2 tests indicated that low back pain patients experience significantly higher levels of general life and family stressors as measured by the SRRS and FES ($T^2 = 67.95$, $df = 21$, $P < 0.05$), and silently greater psychological distress as measured by the STAI-T and BDI ($T^2 = 12.50$, $df = 58$, $P < 0.01$), than control subjects. Depression is a common and costly health problem. The term “depression” can refer to a mood state or an illness diagnosed according to various criteria (e.g, the Diagnostic and Statistical Manual of Mental Disorders (Haggman et al., 2004). The point prevalence of major depression in patients seen by primary care providers has been estimated (in 1990) to be as high as 17.1%, 2 and the total cost of the condition has been estimated to be \$43 billion annually in the United States (Pignone et al., 2002).

The DSM-IV classifies depression into 4 main categories: major depressive disorder, dysthymic disorder, adjustment disorders, and depressive disorder not otherwise specified (NOS). Major depressive disorder is characterized by at least 4 of the following symptoms: depressed mood, loss of interest or pleasure in most activities, change in weight or appetite, increased or decreased sleep, increased or decreased psychomotor activity, fatigue or anergia, feelings of worthlessness or guilt, decreased ability to think, and recurrent thoughts of death or suicide. For the diagnosis of depression to be made, the essential symptoms include either a depressed mood or loss of interest or pleasure that must have been present during a 2-week interval (Haggman et al., 2004).

Depression is common in patients with low back pain (LBP) (MAIN et al., 1992) and is associated with increased pain intensity, increased physical and psychosocial disability, increased medication use, and increased likelihood of unemployment (Sullivan et al., 1992). Although it is not yet clear whether the depression is the cause or result of the LBP, it is clear that the presence of depression is associated with poor outcomes (Mannion et al., 1996).

The present study included 99 subjects with LBP, 36 (36%) men and 63 (64%) women. Out of 99 LBP patients, 26 (26%) were free from depression, whereas 73 (74%) had some degree of depression. Mild depression was recorded in 27 (37%) and moderate, severe or very severe depression in 46 (63%) patients. The most common symptoms were general physical symptoms 70 (71%), psychic anxiety 69 (70%) and depressed mood 66 (67%). It is concluded that depression was more severe in LBP patients with severe disease compared to patients with mild or moderate LBP. Seventy (71%) LBP patients responded positively to the presence of general physical symptoms; 45 (64%) of them reported a feeling of heaviness or pain in the limbs and spine or a feeling of the loss of power, while 25 (36%) of them reported having all these symptoms. Other common symptoms were psychic anxiety (psychological fear) in 69 (70%), depressed mood in 66 (67%), disturbances of work and activity in 63 (64%), difficulty in falling asleep in 62 (63%) and sleep disturbances in 62 (63%) patients (Table 3). Thirty-six (36%) patients recognized that they were depressed, 23 (23%) patients recognized that

they were ill but attributed it to poor diet, climate, too hard work, infection, or the need to rest, while 40 (41%) patients completely denied the illness.

Nevid et al. (2005) define anxiety as an emotional state that is characterized by physiological arousal, unpleasant feelings of tension, and concerns about bad things happening in the future (Nevid et al., 2005). From another perspective, anxiety can also be viewed as a great force in motivating people to engage in various behaviors, including deviant and disturbing ones (Gunarsa, 2008; Wu & McGoogan, 2020). Anxiety can appear at any time and befalls humans out of necessity, cutting across all age groups and social stratifications (Ng & Peggy, 2020). Anxiety is a part of normal human reactions to stressful situations (Fenton et al., 2020) and to real or imaginary threats (phobias) caused by uncertainty (Namora, 2011).

Anxiety may appear alone or in combination with symptoms of other emotional disorders (Pan, 2020). It may cause physiological and psychological changes. Its physical symptoms may include cold fingers, increased heart rate, cold sweats, headaches, reduced appetite, sleep disturbances, and tightness in the chest. Its emotional symptoms may include fear, an inability to focus, restlessness, and a desire to escape reality (Morgan, 2020). The causes of anxiety vary; however, it can generally be alleviated by the removal of its causes (Wiramihardja, 2005). In short, anxiety entails fear or worry in threatening situations, leading to uncertainty and fear of facing the future (Sheherazade & Tsang, 2015).

A cross-sectional study was conducted amongst 50 patients with mechanical low back pain to assess the level of depression, anxiety and stress using DASS-21. 29.72% (25 people) have severe anxiety in the age group 25-35 years whereas 5.88% (11 people) suffer from severe anxiety in the age group from 36-45. 28% (14 people) fall into the normal criteria for anxiety according to DASS 21 scale, 26% (13 people) have mild anxiety, 22% (11 people) have moderate anxiety, 24% (12 people) have severe anxiety (p sathya 2015).

Stress is where a person feels threatened by or under pressure from a particular situation and their body reacts accordingly. Hormones are released to prepare the body for action. The heartbeat increases and blood pressure rises. More blood is sent to the heart and the major muscles and is diverted away from “less important” areas such as

the digestive system hence, the nausea that is often experienced during stress (Behere et al., 2011).

The physiological phenomenon known as “stress” is—in animals and humans alike—most often characterized as the result of real or perceived threat to the organism, typically as a reaction to various external exposures (McEwen & Gianaros, 2010). However, while the bi-directional stress processes between the brain and the cardiovascular, autonomic, and immune systems are essential in promoting short-term allosteric adaptations to stressors with the noble, primary goal of maintaining homeostasis, exposure to long-term stressful conditions leads to a wide array of negative health consequences (Toussaint et al., 2014).

Indeed, persistent stress has been associated with numerous indicators of poor health, including depression and anxiety (Doane et al., 2013), poor sleep (Vinstrup et al., 2018), persistent pain (Arguelles et al., 2006). Generally, greater lifetime stress severity predicts poor mental and physical health (Cohen et al., 2007), and cumulative exposure to work-related stressors has been linked to absenteeism from work, increased healthcare costs, and decreased job performance (HEO et al., 2015).

The patients with low back pain (LBP) not only suffer from physical discomfort, but also functional limitation that might cause disability and interfere with their quality of life. This problem cannot be overemphasized because of the increasing number and cost of the compensated cases with LBP in recent years, and its economic impact is substantial in terms of its contribution to total health costs and back-related disability costs imposed on employers and government insurance programs (Patrick et al., 1995).

In a study of Horng et al., 2005 total 232 patients were recruited. The mean age of the patients and healthy controls was 42.0 15.5 and 37.9 13.1 years, respectively. The majority of the participants were married and employed during the study period. The educational level and proportions of female patients were slightly higher in the group of healthy controls as compared to the patients group. One third of the patients had chronic LBP, defined as LBP for more than 3 months. Among the 232 patients with LBP, the mean scores of items of the WHOQOL-BREF ranged from 2.7 to 3.8. The

mean of the domain scores ranged from 13.0 to 13.8. (Horng et al., 2005). QOL improves over time for women who have received radiation or chemotherapy. Women receiving chemotherapy have higher anxiety scores, and higher anxiety at the start of treatment is associated with decreased QOL at the start of treatment and postdiagnosis (Schreier & Williams, 2004).

3.1 Study Design

This study was conducted using cross sectional survey under a quantitative study design. Survey methodology was chosen to meet the study aim as an effective way to collect data.

3.2 Study Area

The study was conducted in a tertiary level rehabilitation hospital Centre for the Rehabilitation of the Paralysed (CRP) Savar. The data we're collected from the Musculoskeletal unit of CRP, Savar.

3.3 Study Population

All the patients suffering with low back pain (LBP) and came at the outpatient Musculo-skeletal unit of CRP, Savar considered as the population of the study.

3.4 Sample Size

A sample is a smaller group taken from the population. Sometimes the sample size may be big and sometimes it may be small, depending on the population and the characteristics of the study.

When the sample frame is finite,

The equation of finite population correction in case of cross sectional study is:

$$n = Z^2 pq \div d^2$$

where,

Z (confidence interval) = 1.96

P (prevalence) = 84%

d = 0.05

And, $q = (1-p)$

$$= (1-0.84)$$

$$= 0.16$$

$$N = Z^2 pq \div d^2$$

$$= (3.84 \times 0.84 \times 0.16) \div 0.0025$$

$$= 0.51 \div 0.0025$$

$$= 204$$

The actual sample size was, $n = 204$

3.5 Sampling Technique

The study was conducted by using the convenience sampling methods due to the time limitation. Moreover, it was the one of the easiest, cheapest and quicker method of sampling process. The purpose of the study was to find out the influence of anxiety, depression and stress on the Physiotherapy treatment outcome among the patients suffering with Low Back Pain. Hence convenience sampling procedure better suited to get the respondents within the data collection period.

3.6 Inclusion Criteria

- People who had suffering from LBP
- Age range 18 to 60 years
- People who were willingly participate in the study.

3.7 Exclusion Criteria

- People who had low back pain (LBP) with psychiatric disorders.
- People who had cognitive problem.
- People who were suffering with serious pathological diseases e.g. Tumors, tuberculosis etc.

3.8.1 Data Collection Tools

Researcher used Vas scale, Depression, anxiety, stress scale (DASS 21), WHOQOL questionnaire, paper and pen.

3.8.1 Data Collection Procedure

At the very beginning researcher clarified that, the participant had the right to refuse to answer of any question during completing questionnaire. They could withdraw from the study at any time. Researcher also clarified to all participants about the aim of the study. Participants were ensured that any personal information would not be published anywhere. Researcher took permission from each volunteer participant by using a written consent form. After getting consent from the participants, standard questionnaire was used to identify complains and collect demographic information. Questions were asked according to the Bangla format. For conducting the interview, the researcher conducted a face to face interview and asked questions. Physical environment was considered strictly. Stimuli that could distract interviewee were removed to ensure adequate attention of interview. Interviewee was asked questions alone as much as possible with consent as sometimes close relatives could guide answer for them. The researcher built a rapport and clarified questions during the interview. Face to face interviews are the most effective way to get full cooperation of the participant in a survey. Face to face interviews are also effective to describe characteristics of a population. Face to face interviews was used to find specific data which describes the population descriptively during discussion. According to the participants' understanding level, sometimes the questions were described in the native language so that the patients can understand the questions perfectly and answer accurately. All the data were collected by the researcher own to avoid the errors.

3.9 Data Analysis

Data were analyzed with the software named Statistical Package for the Social Science (SPSS) version 26.0. The variables were labeled in a list and the researcher established a computer based data definition record file that consist of a list of variables in order. The researcher put the name of the variables in the variable view of SPSS and defined the types, values, decimal, label alignment and measurement level of data. The next step was cleaning new data files to check the inputted data set to ensure that all data has been accurately transcribed from the questionnaire sheet to the SPSS data view. Then the raw data were ready for analysis in SPSS. Data were collected on frequency and contingency tables. Measurements of central tendency were carried out using the mean plus standard deviation (SD) for variables. For the study of the association of numeric variables chi squared test were used. Data were analyzed by descriptive statistics and calculated as percentages and presented by using table, bar graph, pie charts etc. Microsoft office Excel 2013 was used to decorating the bar graph and pie charts. The results of this study were consisted of quantitative data. By this study a lot of information was collected.

3.10 Ethical Issues

The researcher maintained some ethical considerations: Researcher has followed the Bangladesh Medical Research Council (BMRC) guideline & WHO research guideline. The proposal of the dissertation including methodology was presented to the Institutional Review Board (IRB) of Bangladesh Health Professions Institute (BHPI) for oral presentation defense was done in front of the IRB. Then the necessary information was approved by Institutional Review Board and was permitted to do this research. After getting the permission of doing this study from the academic institute the researcher had been started to do it. The researcher had been taken permission for data collection from the Musculo-skeletal unit of Savar, CRP. The participants would be informed before to invite participation in the study. A written consent form used to take the permission of each participant for the study. The researcher ensured that all participants were informed about their rights and reserves and about the aim and

objectives of the study. Researcher also ensured that the organization (CRP) was not hampered by the study. All kinds of confidentiality highly maintained. The researcher ensured not to leak out any type of confidentialities. The researcher was eligible to do the study after knowing the academic and clinical rules of doing the study about what should be done and what should not. All rights of the participants were reserved and researcher was accountable to the participant to answer any type of study related question.

4.1 Socio-demographic information

4.1.1 Participants age

There were 105 participants in this study. Between 20-30 years age of people are total 25.90%, between 31-40 years age of people are total 46.70%. Between 41-50 years age of people are total 16.30%, Between 51-60 years age of people are total 8.70% and between 61-70 years age of people are total 2.90%. From this chart we can see 31-40 years of people are maximum in percentage in this study. Least percentage people are among 61-70 years of age.

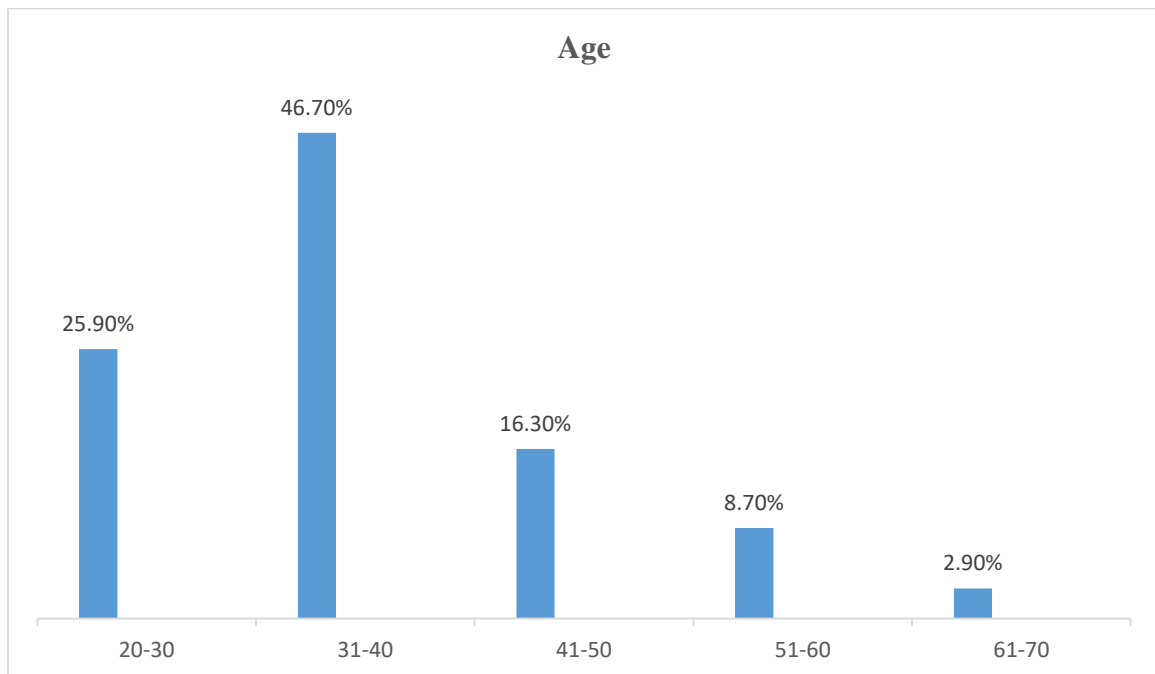


Figure-1: Age of the participants

4.1.1 Gender

Among 105 of the participants most of them were male 75% (n=79). And only a few participants were female 24% (n=26).

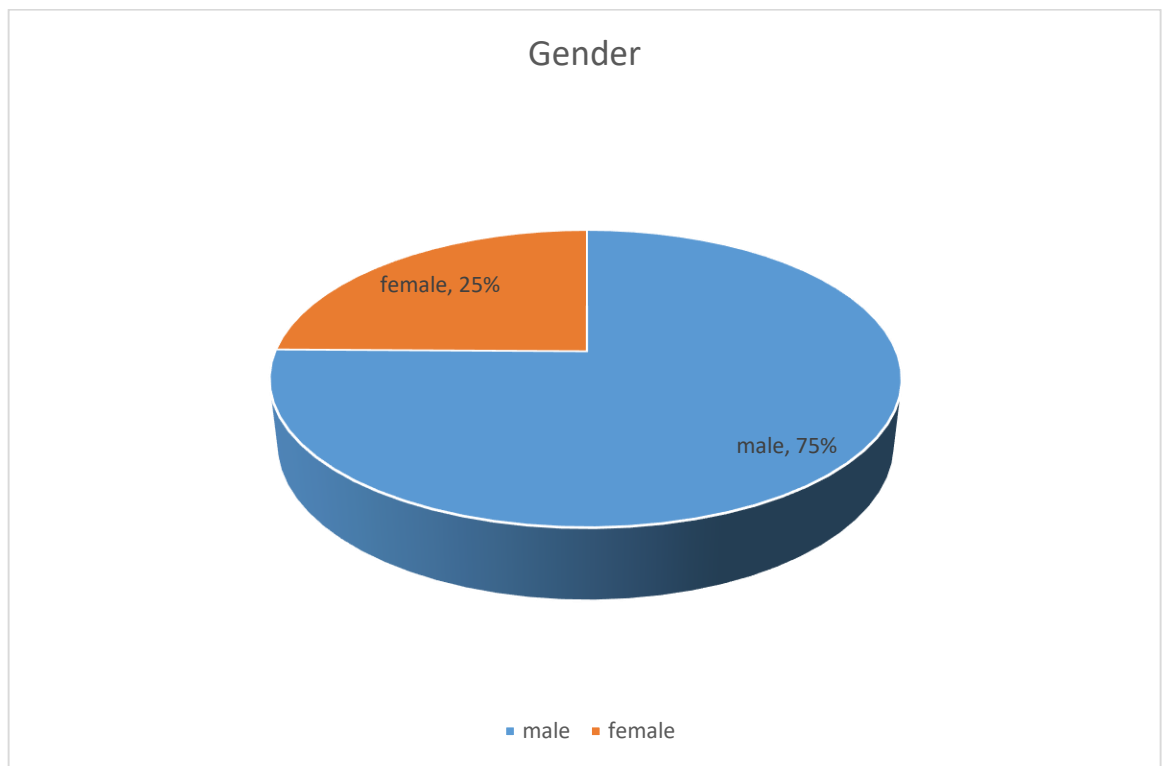


Figure-2: Gender of the participants

4.1.1 Marital status

Among 105 participants most of them were married (n=87). And only a few participants were unmarried (n=18).

Total married participants were 82.86% and unmarried participants were 17.14%. As we can see from the pie chart most of them were married participants.

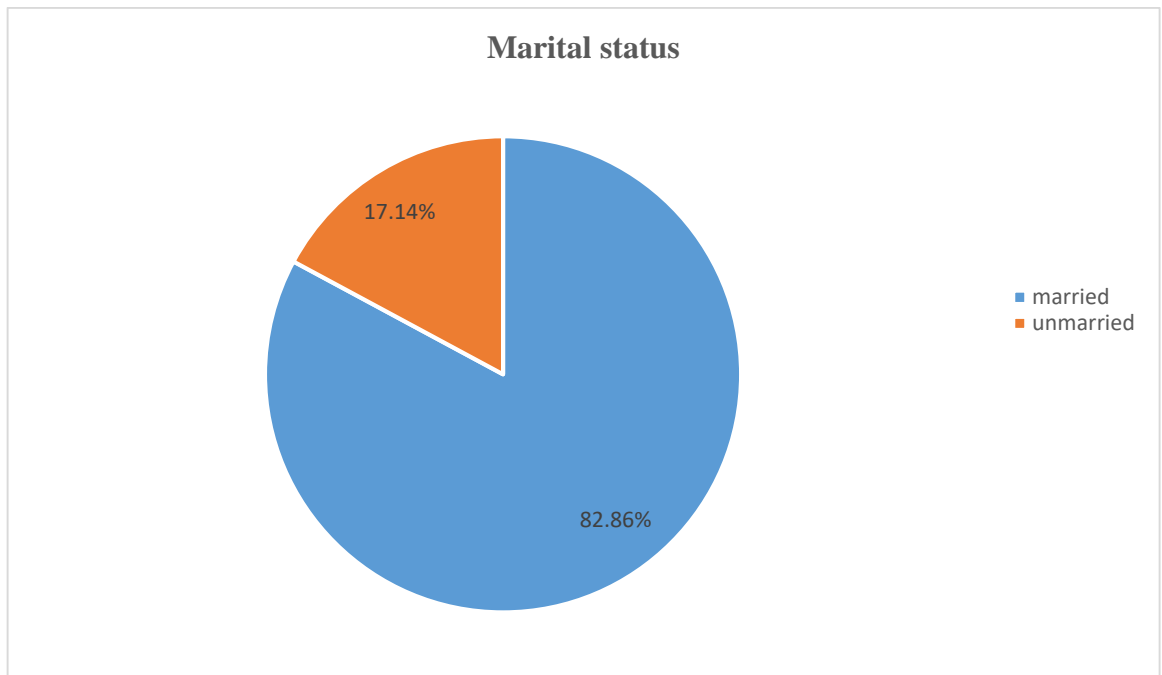


Figure-3: Marital status of the participants

4.1.2 Occupational status of the participants

Among the 105 participants, 25.71% (n=25) participants were in service and 23.81% (n=23) participants were in business. There were a little number of participants were students 15.25% (n=15). There were 7.62% (n=7) participants were involving in garments job and 5.71% (n=5) participants were driver. Among them 2.86% (n=2) participants were day labourer and 1% (n=1) involved in farming.

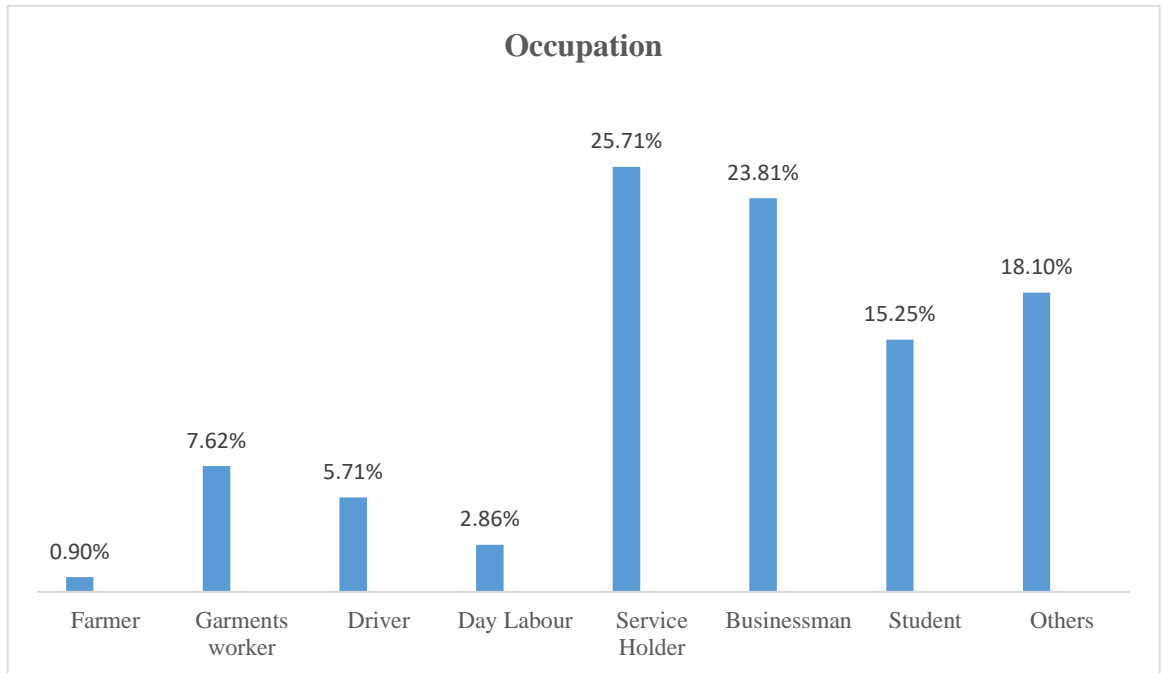


Figure-4: Occupational status of the participants

4.1.3 Educational qualification of the participants

Most of the participants were not highly educated 16.19% (n= 17). Among them 23.81% (n= 23) participants were completed primary and 38.10% (n=39) participants could complete their SSC education and 23.81% (n=24) were completed HSC education.

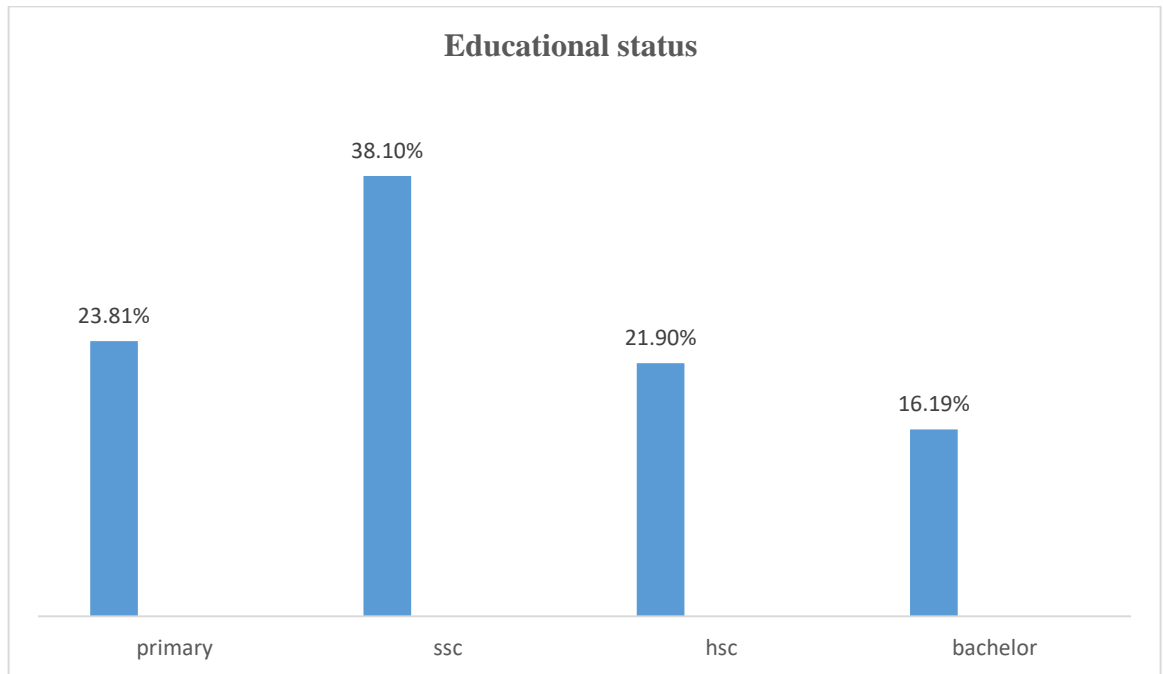


Figure-5: Educational status of the participants

4.1.6 Residential area

Among 105 participants most of them were living in urban 80% (n=80). And rural participants were 16.19% (n=17). A few people were living in semi urban 3.81% (n=4).

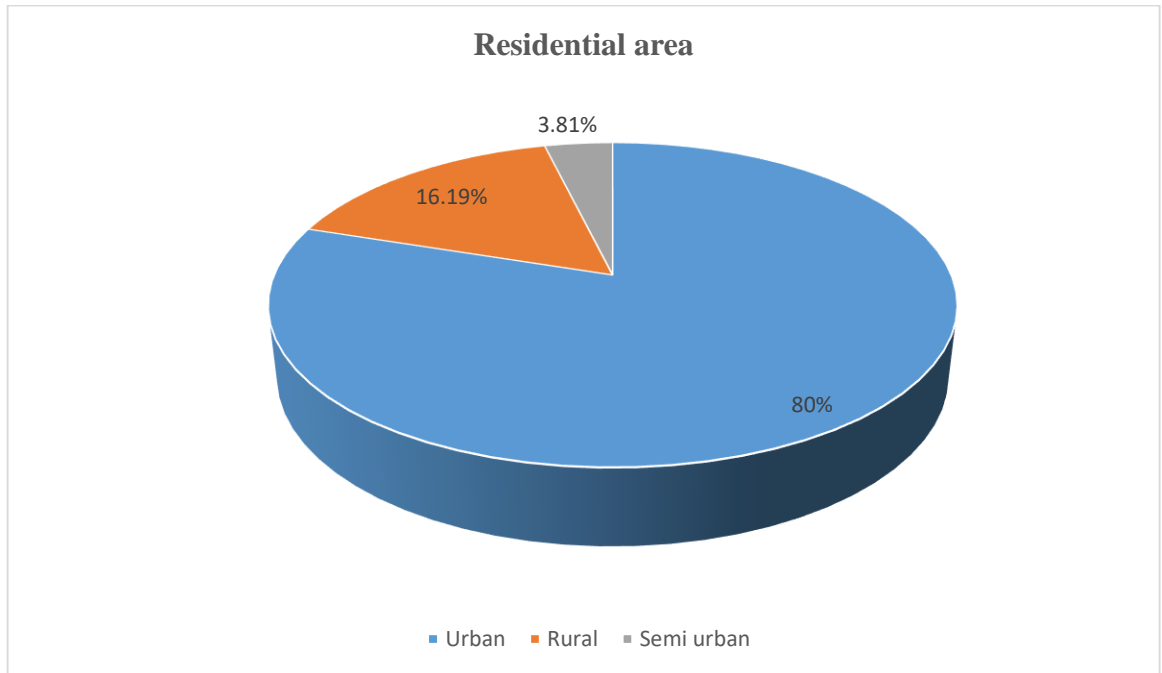


Figure-6: Residential area of the participants

4.1.7 Smoking of the participants

Among 105 participants most of them were smoker 55.24% (n=58). And nonsmoker participants were 44.76% (n=47).

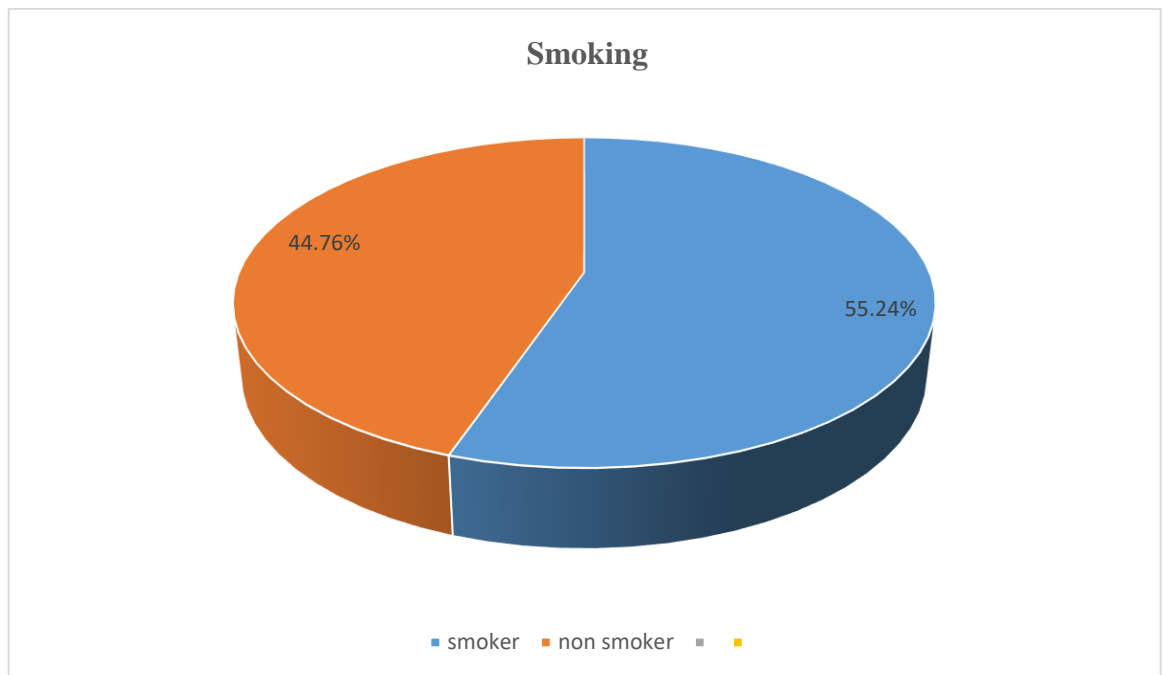


Figure-7: Smoking of the participants

4.1.8 pain rating of the participants

There were 105 participants in this study. 12.38% scored vas scale 5, 34.29% scored 6 and 35.24% scored 7 and 18.10% scored 8.

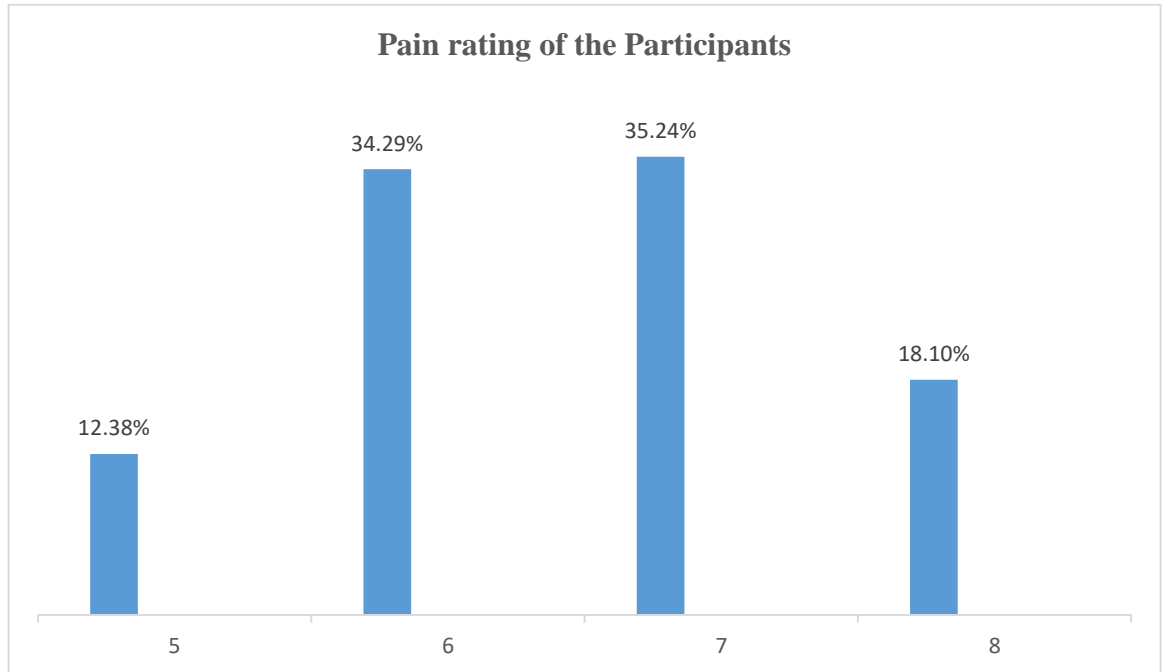


Figure-8: pain rating of the participants

4.1.9 Monthly income of the participants

Total of 105 patients there were 26 person monthly income 0-10000, 34 person monthly earn 11000-20000, only 9 person monthly income 21000-30000 and 17 person monthly income is highest 31000-75000.

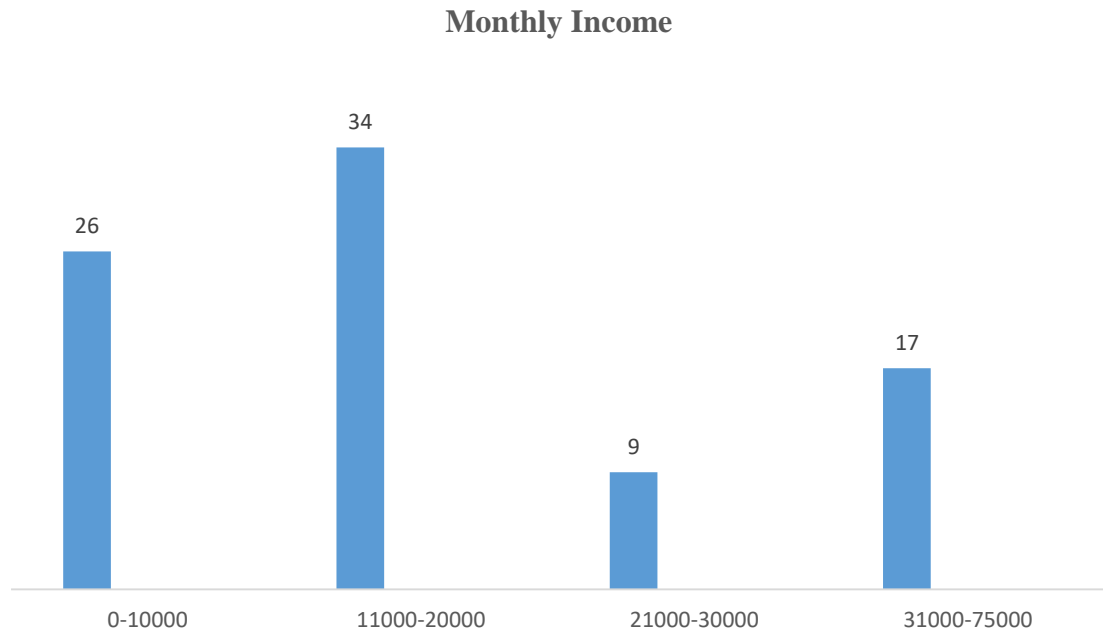


Figure-9: Monthly income of the participants

Table-1 Demographic Features of the Participants

Variable	Frequency, (n)	Percentage,(%)
Age		
20-30	27	25.9%
31-40	49	46.7%
41-50	17	16.3%
51-60	9	8.7%
61-70	3	2.9%
Gender		
Male	79	75%
Female	26	25%
Marital status		
Married	87	82.86%
Unmarried	18	17.14%
Educational status		
Primary	23	23.81%
SSC	40	38.10%
HSC	23	21.90%
Bachelor	17	16.19%
Occupation		
Farmer	1	0.90%
Garment worker	7	7.62%
Driver	5	5.71%
Day labourer	2	2.86%
Service holder	25	25.71%
Businessman	23	23.81%
Student	15	15.25%
Others	18	18.10%

Residential area		
Rural	17	16.19%
Semi urban	4	3.81%
Urban	84	80%
Smoking		
Yes	58	55.24%
No	47	44.76%
Vas score		
5	12	12.38%
6	34	34.29%
7	35	35.24%
8	18	18.10%
Monthly Income		
0-10000	26	26.32%
11000-20000	34	34.29%
21000-30000	9	9.10%
31000-75000	17	17.28%

Table 2: Evaluation the quality of life of the patients with LBP suffering along with anxiety, depression and stress

Variable	Chi square value (X ²)	P value
	Depression	
Physical Health	76.975	0.00
Psychological Health	254.578	0.00
Social Relationships	264.170	0.00
Environment	167.190	0.00
	Anxiety	
Physical Health	360.915	0.00
Psychological Health	254.575	0.00
Social Relationships	161.734	0.00
Environment	181.981	0.00
	Stress	
Physical Health	247.724	0.00
Psychological Health	242.075	0.00
Social Relationships	121.196	0.00
Environment	160.222	0.00

Table-3 Level of Depression, Anxiety and Stress according to DASS

	DASS Score	Percentage (%)	Frequency (n)
Level of Depression	Normal (0-4)	45.7%	48
	Mild (5-6)	7.7%	8
	Moderate (7-10)	46.7%	49
Level of Anxiety	Normal (0-3)	11.5%	12
	Mild (4-5)	28.6%	30
	Moderate (6-7)	29.5%	21
	Severe (8-9)	19.1%	20
	Extremely severe (10+)	11.4%	12
Level of Stress	Normal (0-7)	15.3%	16
	Mild (8-9)	35.2%	37
	Moderate (10-12)	41%	43
	Severe (13-16)	8.6%	9

Table-4 Relation between DASS and intensity of pain

Variable	Pain	
	Chi square Value (X^2)	P Value
Depression	59.913	0.00
Anxiety	101.464	0.00
Stress	76.975	0.00

Table 2: Evaluation the quality of life of the patients with LBP suffering along with anxiety, depression and stress

From this study, researcher found a relation between Depression and Physical Health Their chi square value was 76.975 and P value was 0.00 which was highly significant. Researcher also found a relation between Depression and Psychological Health. Their chi square value was 254.578 and P value was 0.00 which was highly significant. Furthermore, this study showed, a relation between Depression and Social Relationships has been associated. Their chi square value was 264.170 and P value was 0.00 which was highly significant. Finally the 4th factor of WHO-QOL the Environment factor was related with Depression. Their chi square value was 167.190 and P value was 0.00 which was highly significant.

From this study, researcher found a relation between Anxiety and Physical Health. Their chi square value was 360.915 and P value was 0.00 which was highly significant. Researcher also found a relation between Anxiety and Psychological Health. Their chi square value was 254.575 and P value was 0.00 which was highly significant. Furthermore, this study showed, a relation between Anxiety and Social Relationships. Their chi square value was 161.734 and P value was 0.00 which was highly significant. Finally, researcher found a relation between Anxiety and Environment. Their chi square value was 181.981 and P value was 0.00 which was highly significant.

From this study, researcher found a relation between Stress and Physical Health. Their chi square value was 247.724 and P value was 0.00 which was highly significant. Researcher also found a relation between Stress and Psychological Health. Their chi square value was 242.075 and P value was 0.00 which was highly significant. Furthermore, this study showed, a relation between Stress and Social Relationships. Their chi square value was 121.196 and P value was 0.00 which was highly significant. Finally, researcher found a relation between Stress and Environment. Their chi square value was 160.222 and P value was 0.00 which was highly significant.

Table-3 Level of Depression, Anxiety and Stress according to DASS

Data presented in the Table- 3 showed that the two third (54.7%) of the subjects experienced some level of depression. Among them highest percentage (46.7%) belonged to moderate depression, only 7.7% to mild category.

(88.6%) of the subjects experienced some level of anxiety. Among them highest percentage (29.5%) belonged to moderate anxiety, only 11.4% to extremely severe category, 28.6% belonged to mild anxiety and only 29.5% moderate category.

(84.8%) of the subjects experienced some level of stress. Among them highest percentage (41%) belonged to moderate stress, only 8.6% to severe category, 35.2% belonged to mild stress.

Table-4 Relation between DASS and intensity of pain

From this study, researcher found a relation between pain and depression. Their chi square value was 59.913 and P value was 0.00 which was highly significant, And researcher also found a relation between pain and anxiety. Their chi square value was 101.464 and P value was 0.00 which was highly significant. Furthermore, From this study, a relation between pain and stress also found. Their chi square value was 76.975 and P value was 0.00 which was highly significant.

5.1 Discussion

As discussed above, back pain is one of the leading causes of disability across the globe and there is also a wealth of evidence that it negatively impacts the quality of life and heightens the risk of mental health problems and mood disorders (Bento et al., 2020).

A recently published study found that an intervention consisting of physiotherapy combined with cognitive functional therapy was superior to a treatment option consisting of physiotherapy focusing only on the physical aspects of pain and disability (Damgaard et al., 2013). Due to prodigious evidence in favor of the parallel relation of chronic pain and mental health Bruns & Disorbio (2014) proposed that the psychological evaluation should be an integral part of the diagnostic workup for chronic pain (Bruns & Disorbio, 2014).

In this present study, we found that out of 105 patients with lower back pain, 76% n = 79 are males, while 24% n= 26 are females. This gender and age distribution of patient reflects the fact that the population of savar comprises a large number of expatriates and many of them are male workers.

However, Wood et al., 2010 showed that female subjects are more prone to mental distress as compared to their male counterparts.

In the present study depression, anxiety and stress was screened by Depression Anxiety and Stress Scale (DASS), which is a set of 3 self-report scales designed to measure symptoms of psychological distress including depression, anxiety, and stress (Lovibond & Lovibond, 1995). The Depression scale assesses low positive affect, loss of self-esteem and incentive, and sense of hopelessness. The anxiety scale assesses autonomic arousal and fearfulness (physiological hyperarousal). The stress scale assesses difficulty relaxing, persistent tension, irritability, and low threshold for becoming upset or frustrated. Each of the 3 scales contains 7 items that can be summed to represent a composite measure of negative emotional symptoms or psychological distress (Lovibond & Lovibond, 1995).

Various cross-sectional studies indicate an association between psychological factors and the occurrence of low back pain (Smith, 1997).

The prevalence rates were significantly greater than the rates in the general population; 54.2% of patients with depression, 88.6% of those with anxiety disorders and 84.8% of those with stress disorders. The present study found a high prevalence of anxiety, depression and stress in chronic low back pain patients. Moderate levels of anxiety, depression and stress were found in 29.5%, 46.7% and 41% of the patients. Mild levels of anxiety, depression and stress were found in 28.6%, 7.7% and 35.2% of the patients, respectively. Out of them, 19.1% and 8.6% were severe for anxiety and stress respectively, and 11.4% were extremely severe for anxiety respectively. The present study also found that a significant number of patients with LBP had mental distress.

Christensen et al., 2015 conducted a study among 360 patients of LBP and suggested that 6.7% of patients had depression, 37.7% had anxiety, and 46.4% had stress. These findings are parallels to the findings of another current study, which showed higher mental distress among LBP patients as compared to the control group.

Pain rating of the 105 participants shows that 12.38% of the participants scored in vas scale rating 5, 34.29% of the participants scored 6, 35.24% showed 7 and 18.10% has pain on vas scale rating score 8. This research also found pain is significantly associated with depression, anxiety and stress.

Pain can cause depression or make existing depression worse. Depression can also make existing pains worse. Stress has both physical and emotional effects on our bodies. It can raise our blood pressure, increase our breathing rate and heart rate, and cause muscle tension. These things are hard on the body. They can lead to fatigue, sleeping problems, and changes in appetite. Anxiety can cause people to change their behaviors and posture, including the way they sit, what they do when they sit, whether they slouch, and so on. Changes in posture – especially when combined with the muscle tension from anxiety – can cause the muscles to be in uncomfortable positions and ultimately lead to back pain. Another issue related to anxiety is hypersensitivity.

Those with anxiety tend to experience physical sensations more than those without anxiety. Also in the study by Mok et al. depression and anxiety were correlated with intensity of pain (Mok & Lee, 2008). There were 48 male and 54 female adult participants in the study. The level of anxiety and depression was significantly positively correlated with pain intensity ($r= 0.471, p<0.0005$) and was also a significant predictor of pain intensity ($t=3.918, p<0.0005, 95\% \text{ CI } 0.050-0.154$). The results of this study showed that anxiety and depression are not only associated with pain intensity but that they also, partly, predict pain intensity in patients with low back pain who are newly admitted to an acute care hospital (Mok & Lee, 2008).

Back pain is rarely fatal but profoundly affects functioning, so there are important implications for the quality of life of these patients. Previous reports have already indicated the significance of both physical activity limitation and psychological stress in patients with LBP (Astrand, 1987). According to the gender depression, anxiety and stress was seen more with females (22 females) than in males (28 males). A higher rate in females with low back pain suffering from depression, anxiety and stress than males, may be due to the possibility of greater rates of pains due to osteoporosis, menstruation, and pregnancy among women, or possibly because women were more willing to report depression, anxiety and stress than men (Abdulbari Bener et al., 2013).

In this study researcher has found association with depression and physical health, psychological health, social relationships and environment. Similarly with anxiety and stress association is significant which means quality of life influence by depression, anxiety and stress.

Depression is known to occur more commonly in patients with PD than age-matched controls, and be associated with increased disability, worse Hr-QoL and greater caregiver burden (Schrag, 2006). Anxiety is known to intensify physical symptoms and, thus, influence overall QOL. Anxiety is a barrier to the treatment of breast cancer patients and overall QOL during chemotherapy period (Schreier & Williams, 2004).

5.2 Limitations

There might be some limitations in every research. In this study small sample size may be constituted a limitation. As the study was conducted at selected area of Center for the Rehabilitation of the Paralysed (CRP) in Musculoskeletal (MS) unit which might not represent the whole population with LBP in the context of Bangladesh. Another major limitation was time and resource which have great impact on study and affect the result to generalize for wider population. As the study period was short so the adequate number of sample could not arrange for the study.

6.1 Conclusion

Screening for symptoms of depression, anxiety and stress during the initial consultation is important because they are an indicator of poor prognosis. Because depression has clearly been shown to influence the clinical course of mechanical low back pain, screening for depressive symptoms is crucial for optimal physical therapist management.

The findings of this study revealed that LBP and psychological issues are related to each other. A notable number of patients had anxiety, depression and stress. Moreover, depression, anxiety and stress was associated with quality of life and pain. Therefore, these findings acknowledge the importance of psychological assessment and treatment, in addition to biomedical aspects when managing patients with LBP. This study divulges that clinicians should be aware of potentially high rates of emotional distress syndromes in chronic low-back pain and enlist mental health professionals to help maximize treatment outcomes. Further research is required to find out more about the links between LBP and mental distress to ensure the development of effective treatments.

6.2 Recommendation

Depression is an inevitable consequence after having LBP as well as anxiety and stress and has negative influence on daily, physical, cognitive functioning among people having Low Back pain (LBP). So, the necessity is to give more attention to this psychological aspect which is linked to LBP. There are many studies based on LBP but there are few amount of studies related to the concept of this patient's psychology such as depression, anxiety and stress. If other authors want to do further related study, they are recommended to do their study in whole country perspective with increased sample size.

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APPENDIX

Informed consent

(Please read out to the participant)

Assalamualaikum,

My name is Imtiaz Ahmed. I am conducting this research study which is the part of B.Sc. in Physiotherapy program and my research title is “ Influence of Anxiety, Depression and Stress for the patients with Low back pain on physiotherapy treatment outcome attended at Centre for the Rehabilitation of the Paralyzed (CRP), Savar” under Bangladesh Health Professions Institute (BHPI), University of Dhaka. I would like to know about some personal and other related information regarding depression, anxiety, stress and quality of life among people who having low back pain. You have to answer some questions which are mention in the attached Form. This will take approximately 20-30 minutes.

I Would like to inform you that this is a purely professional study and will not be used for any other purpose. So your participation in the research will have no impact on your present or future treatment. All information provided by you will be treated as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous.

Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a Particular question that you don't like or do not want to answer during interview.

If you have any query about the study or your right as a participant, you may contact with researcher Imtiaz Ahmed or my supervisor Dr. Shamima Islam Nipa , Lecturer Department of Rehabililtation Science, BHPI, CRP, Savar, Dhaka-1343.

Do you have any questions before I start?

So may I have your consent to proceed with the interview?

Yes

No.....

Signature of the Participant's..... Date.....

Signature of the Witness's.....Date.....

Signature of the Data collector's.....Date.....

Questionnaire

(English)

Part :1 Socio-demographic Information

Question	Answer
Participants name	
Age	
Address	
Mobile number	
Gender	1 = Male 2 = Female
Marital status	1 = Married 2 = Unmarried
Educational status	1 = Illiterate 2 = Primary 3 = Secondary 4 = Higher secondary 5 = Graduation 6 = Post graduate
Occupation	1 = Farmer 2 = Garments worker 3 = Driver 4 = Day laborer 5 = Service holder 6 = Businesses 7 = Retired 8 = Student 9 = Others
Monthly income	
Living area	1.Rural 2.semirural 3.Urban
Do you smoke cigarettes ?	1.Yes 2.No

Part 2- Vas scale & Session related questions

- How many Physiotherapy session do you have taken?
.....
- Are you willing to discontinue the physiotherapy treatment by your own?
 1. Yes
 2. No
- Why you want to discontinue the physiotherapy treatment?
.....
- Do you have any pain in your body?
 1. Yes
 2. No
- What is your type of pain?
 1. Acute pain
 2. Chronic pain

Place a mark on the line below to indicate your current level of pain



Part : 2 DASS 21 Questionnaire

1 (s) I found it hard to wind down	0	1	2	3
2 (a) I was aware of dryness of my mouth	0	1	2	3
3 (d) I couldn't seem to experience any positive feeling at all	0	1	2	3
4 (a) I experienced breathing difficulty (e.g. excessively rapid breathing, Breathlessness in the absence of physical exertion)	0	1	2	3
5 (d) I found it difficult to work up the initiative to do things	0	1	2	3
6 (s) I tended to over-react to situations	0	1	2	3
7 (a) I experienced trembling (e.g. in the hands)	0	1	2	3
8 (s) I felt that I was using a lot of nervous energy	0	1	2	3
9 (a) I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10 (d) I felt that I had nothing to look forward to	0	1	2	3
11 (s) I found myself getting agitated	0	1	2	3
12 (s) I found it difficult to relax	0	1	2	3
13 (d) I felt down-hearted and blue	0	1	2	3
14 (s) I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15 (a) I felt I was close to panic	0	1	2	3
16 (d) I was unable to become enthusiastic about anything	0	1	2	3
17 (d) I felt I wasn't worth much as a person	0	1	2	3
18 (s) I felt that I was rather touchy	0	1	2	3
19 (a) I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20 (a) I felt scared without any good reason	0	1	2	3
21 (d) I felt that life was meaningless	0	1	2	3

Part : 3 WHOQOL-BREF

		Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very Satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the last Four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?					

		Not At all	A little	A moderate amount	Very much	An extreme amount
4.	How much do you need any medical treatment to function in your daily life?					
5.	How much do you enjoy life?					
6.	To what extent do you feel your life to be meaningful?					

		Not	A	A	Very	Extremely
--	--	-----	---	---	------	-----------

		at all	little	moderate amount	much	
7.	How well are you able to concentrate?					
8.	How safe do you feel in your daily life?					
9.	How healthy is your physical environment?					

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?					
11.	Are you able to accept your bodily appearance?					
12.	Have you enough money to meet your needs?					
13.	How available to you is the information that you need in your day-to-day life?					

14.	To what extent do you have the opportunity for leisure activities?					
-----	--	--	--	--	--	--

15.	How well are you able to get around?					
-----	--------------------------------------	--	--	--	--	--

16.	How satisfied are you with your sleep?					
17.	How satisfied are you with your ability to perform your daily living activities?					
18.	How satisfied are you with your capacity for work?					

19.	How satisfied are you with yourself?					
-----	--------------------------------------	--	--	--	--	--

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite Often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

সম্মতিপত্র

আসসালামুয়ালাইকুম,

আমি ইমতিয়াজ আহমেদ, বাংলাদেশ হেল্থ প্রফেশন্স ইন্সটিটিউট এর বিএসসি ইন ফিজিওথেরাপি কোর্সের ৪র্থ বর্ষের একজন শিক্ষার্থী। অধ্যয়নের অংশ হিসেবে আমাকে একটি গবেষণা সম্পাদন করতে হবে এবং এটা আমার প্রাতিষ্ঠানিক কাজের একটা অংশ।

আমার গবেষণার বিষয় হল “কোমর ব্যাথার রোগীদের ফিজিওথেরাপি চিকিৎসা উদ্বেগ, বিষন্নতা এবং চাপ এর প্রভাব”।

আমার গবেষণা সার্থকভাবে সম্পূর্ণ করার মাধ্যমে যারা কোমর ব্যাথার রোগী আছেন তারা উপকৃত হবেন এবং এটি হবে একটি পরীক্ষামূলক প্রমাণ। গবেষণাটি সম্পাদনের জন্য, আমার তথ্য সংগ্রহ করা প্রয়োজন হবে। গবেষণার ক্ষেত্র বিবেচনা করে আপনার মাঝে আমার গবেষণায় অংশগ্রহণ করার জন্য প্রয়োজনীয় বৈশিষ্ট্য লক্ষ্য করা গেছে। এজন্য আপনি আমার গবেষণার একজন সম্মানিত অংশগ্রহণকারী হতে পারেন এবং আমি আপনাকে আমার গবেষণায় অংশগ্রহণ করতে অনুরোধ জানাচ্ছি।

আমি প্রতিজ্ঞা করছি যে, এই গবেষণা আপনার জন্য ঝুঁকিপূর্ণ হবে না অথবা ক্ষতি হবে না। গবেষণা চলাকালীন শময়ে কোনরকম দ্বিধা বা ঝুঁকি ছাড়াই যে কোন সময়ে আপনি বাদ দিতে পারবেন। এই গবেষণায় প্রাপ্ত তথ্য সম্পূর্ণভাবে গোপনীয় থাকবে এবং অংশগ্রহণকারীর ব্যক্তিগত তথ্য অন্য কোথাও প্রকাশ করা হবে না।

যদি আপনার গবেষণা সম্পর্কে কোন জিজ্ঞাসা থাকে তবে আপনি অনুগ্রহকপূর্বক যোগাযোগ করতে পারেন গবেষক ইমতিয়াজ আহমেদ এর সাথে।

শুরু করার আগে আপনার কি কোন প্রশ্ন আছে ?

আমি কি শুরু করতে পারি ?

হ্যাঁ

না.....

অংশগ্রহণকারীর স্বাক্ষর.....

তারিখ.....

সাক্ষীর স্বাক্ষর.....

তারিখ.....

তথ্য সংগ্রহকারীর স্বাক্ষর.....

তারিখ.....

সম্মতিপত্র

আসসালামুয়ালাইকুম

আমি ইমতিয়াজ ইমমিয়াজ আহমমদ, বাংলামদশ হহল্‌থ প্রমেশন্স ইন্সটিটিউট এর মবপ্রসমস ইন মেজজেওমথরামির ৪র্থ বমষর একজন মশক্ষাথী। অধ্যায়মনর অাংশ মহমসমব আমামক একটি গমবষণা সম্পাদন করমি হমব এবাং এিা আমার প্রামিঠামনক কামজর একিা অাংশ। মনমনাক্ত িথযামদ িাঠ করার ির অাংশগ্রহমণর জনয অনুরাধ্ করা হমলা।

আমার গমবষণার মবয হল “ক মোর ঝােথের ঝােগীদের িােই িােই ওদথরোপ িােই িােই উদেগ, চ্চবল্লি এবং িােই প এর িােই”। এই গমবষণার মাধ্যম আম হকামর বযাথার হরাগীমদর উমেগ, মবষণিােই এবং চািােই মনরকিমনর একটি িরীক্ষা করব।

আমার গমবষণা সাথকভামব সম্পূর্ণ করার মাধ্যম যারা হকামর বযাথার হরাগী আমনে িারা উিক্ িােই হমবন এবং এটি হমব একটি িােই রীক্ষামূলক প্রমাণ। গমবষণাটি সম্পাদনর জনয, আমার িথয সাংগ্ৰহ করা প্রময়াজন হমব। গমবষণার হক্‌তর মবমবচনা কমর আনার মামে আমার গমবষণায় অাংশগ্রহণ করার জনয প্রময়াজনীয বমশষ্ট লক্ষ্য করা হগমে। এজনয, আমন আমার গমবষণার একজন সম্মামদ িােই অাংশগ্রহণকারী হমি িামরন এবং আমম আনামক আমার গমবষণায় অাংশগ্রহণ করমি অনমরাধ্ জানাজি।

আমম প্রিজ্ঞােই করমে হয, এই গমবষণা আনার জনয িােই মকিণ হমব না অথবা ক্‌মি হমব না। গমবষণা চলাকালীন সমময় হকান রকম মেধা বা িােই মক িােই হয হকান সমময় আমন বাদ মদমি িারমবন। এই গমবষণায় িােই িথয সম্পূর্ণভামব হগািনীয থাকমব এবং অাংশগ্রহণকারীর বযক্তগাি িথয অনয হকাথাও প্রকাশ করা হমব না।

যমদ আনার গমবষণা সম্পক হকান জজ্ঞাসা থামক িমব আমন অনুহক িুবক িামরন গমবষক ইমমিয়াজ আহমমদ এর সামথ। িামরথ.....

শুরু করার আমগ আনার মক হকান প্রশ্ন আমে ? আমম

মক শুরু করমি িামর ?

হযােই না

অাংশগ্রহণকারীর স্বাক্ষর হযাগামযাগ করমি িােই

িামরথ...

.....

সাক্ষীর শাক্ষর.....

পর্ব -১ আর্থ-সামাজিক তথ্য

প্রশ্ন	উত্তর
অংশগ্রহণকারীর নাম	
বয়স	
ঠিকানা	
মোবাইল নাম্বার	
লিঙ্গ	১. পুরুষ ২. মহিলা
বৈবাহিক সম্পর্ক	১. বিবাহিত ২. অবিবাহিত
শিক্ষাগত যোগ্যতা	১. নিরক্ষর ২. প্রাথমিক ৩. মাধ্যমিক ৪. উচ্চ মাধ্যমিক ৫. স্নাতক ৬. স্নাতকোত্তর
পেশা	১. কৃষক ২. গার্মেন্টস শ্রমিক ৩. ড্রাইভার ৪. দিন মজুর ৫. চাকুরিজীবী ৬. ব্যবসায়ী ৭. অবসরপ্রাপ্ত ৮. শিক্ষার্থী ৯. অন্যান্য
মাসিক আয়	
বসবাসের এলাকা	১. গ্রাম ২. মফস্বল ৩. শহর
আপনি কি ধূমপান করেন?	১. হ্যা ২. না

পর্ব – ২ ভাস স্কেল এবং সেশন সম্পর্কিত প্রশ্নাবলী

- আপনি কয়টা ফিজিওথেরাপির সেশন নিয়েছেন ?

-
- আপনি নিজেই কি ফিজিওথেরাপি চিকিৎসা বন্ধ করতে ইচ্ছুক?

১.হ্যাঁ

২.না

- ফিজিওথেরাপি চিকিৎসা না চালানোর কারণ কি?

.....

- আপনার শরীরে কি কোন ব্যাথা আছে?

১.হ্যাঁ

২.না

- আপনার ব্যাথার ধরন কি রকম?

১. আকস্মিক ব্যাথা

২. দীর্ঘস্থায়ী ব্যাথা

- আপনার বর্তমান ব্যাথার মাত্রা নির্দেশ করতে নীচের লাইনে একটি চিহ্ন রাখুন

0 _____ 10

ব্যাথা নাই

ব্যাথা যতটা খারাপ হতে পারে

পর্ব-৩ ডাস -২১ বাংলা

- ০ আমার জন্য একেবারেই প্রয়োজ্য নয়
 ১ আমার জন্য অল্পমাত্রায় বা কখনো কখনো প্রয়োজ্য
 ২ আমার জন্য বেশ কিছুমাত্রায় প্রয়োজ্য
 ৩ আমার জন্য খুব বেশি সময়ের জন্য প্রয়োজ্য

১. কোন উৎকর্ষা বা উত্তেজনামূলক কাজের পর আরামদায়ক অবস্থায় ফিরে আসা কঠিন ছিল।	০	১	২	৩
২. আমি বুঝতে পারতাম যে আমার গলা শুকিয়ে আসছে।	০	১	২	৩
৩. ইতিবাচক কোনকিছুই আমার মধ্যে কাজ করত না।	০	১	২	৩
৪. আমার শ্বাসকষ্টের অনুভূতি হত।	০	১	২	৩
৫. নিজে উদ্যোগী হয়ে কোন কাজ করা আমার জন্য কঠিন হত।	০	১	২	৩
৬. আমার মধ্যে বিভিন্ন পরিস্থিতিতে অতিরিক্ত প্রতিক্রিয়া করার প্রবণতা ছিল।	০	১	২	৩
৭. আমার শরীর কাপার অভিজ্ঞতা হয়েছিল (যেমন হাত কাপা)।	০	১	২	৩
৮. আমার মনে হত যে আমি খুব বেশি স্নায়ু চাপে ভুগছি।	০	১	২	৩
৯. আমি এমন পরিস্থিতি সম্পর্কে দুশ্চিন্তাগ্রস্ত ছিলাম যেখানে আমি তীব্রভাবে আতঙ্কিত হতে পারি এবং এমন কোন কাজ করতে পারি যাতে অন্যরা আমাকে বোকা মনে করবে।	০	১	২	৩
১০. আমার মনে হচ্ছিল, ভবিষ্যতে আমার ভালো কিছুই আশা নাই।	০	১	২	৩
১১. আমি অনুভব করতাম যে আমি খুব অস্থির হয়ে যাচ্ছি।	০	১	২	৩
১২. আরাম বোধ করা আমার জন্য কঠিন হত।	০	১	২	৩
১৩. আমি মনমরা এবং বিষণ্ণ অনুভব করতাম।	০	১	২	৩
১৪. আমার কাজে বাধা হয় এমন যে কোন জিনিসই আমার কাছে অসহ্য লাগত।	০	১	২	৩
১৫. আমার মনে হত এই বুঝি আমি হঠাৎ তীব্রভাবে আতঙ্কিত হচ্ছি।	০	১	২	৩
১৬. কোন কিছুতেই আমি বেশি আগ্রহী হতে পারতাম না।	০	১	২	৩
১৭. আমি অনুভব করতাম ব্যক্তি হিসেবে আমার বিশেষ কোন মূল্য নাই।	০	১	২	৩
১৮. আমি অনুভব করতাম আমি একটুতেই মনে ব্যাথা পাই।	০	১	২	৩
১৯. শারীরিক পরিশ্রম না করলেও আমি হৃদপিণ্ডের কাজ করা বুঝতে পারতাম(বুক ধরফর করা)।	০	১	২	৩
২০. যথাযথ কারণ ছাড়াই আমি ভীত-সন্ত্রস্ত বোধ করতাম।	০	১	২	৩
২১. জীবনটা অর্থহীন বলে মনে হত।	০	১	২	৩

পর্ব-৪ ডব্লিউ এইচ ও কিউ ও এল ব্রিফ প্রশ্নাবলী

সবগুলো প্রশ্ন পড়ুন আপনার অনুভূতি যাচাই করুন এবং পাশের ছকে যে উত্তরটি সব চেয়ে সঠিক মনে হবে সেটিতে বৃত্ত তৈরি করুন।

		খুব খারাপ	খারাপ	ভালো ও নয় খারাপও নয়	ভালো	খুব ভালো
১.(জি১)	আপনার জীবন যাত্রার মান কেমন?	১	২	৩	৪	৫

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
২.(জি৪)	আপনার স্বাস্থ্য নিয়ে কি আপনি সন্তুষ্ট?	১	২	৩	৪	৫

নিচের প্রশ্নগুলো গত দুসপ্তাহে নিম্নবর্ণিত অভিজ্ঞতাগুলো কি পরিমাণে হয়েছে সে সম্পর্কে।

		একদম না	কম	মোটামুটি	বেশী	খুব বেশী পরিমাণে
৩(এফ১.৪)	শারীরিক ব্যাথার জন্যে আপনি আপনার প্রয়োজনীয় কাজ থেকে কতটুকু বিরত ছিলেন?	১	২	৩	৪	৫
৪(এফ১১.৩)	আপনার দৈনন্দিন কার্যক্রম চালিয়ে যেতে চিকিৎসা কতটুকু প্রয়োজন?	১	২	৩	৪	৫
৫(এফ৪.১)	আপনি জীবনকে কতটুকু উপভোগ করেন?	১	২	৩	৪	৫
৬(এফ২৪.২)	আপনার জীবনকে কতটুকু অর্থপূর্ণ মনে হয়?	১	২	৩	৪	৫

		একদম না	কম	মোটামুটি	বেশী	খুব বেশী
৭(এফ৫.৩)	আপনি কত ভালো মনোনিবেশ করতে পারেন?	১	২	৩	৪	৫
৮(এফ১৬.১)	আপনি আপনার দৈনন্দিন জীবনে নিজেকে কতোটুকু নিরাপদ মনে করেন?	১	২	৩	৪	৫
৯এফ(২২.১)	আপনার আশেপাশের পরিবেশ কতোটুকু স্বাস্থ্যকর?	১	২	৩	৪	৫

		একদম না	কম	মোটামুটি	অধিকাংশ	পরিপূর্ণভাবে
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১০(এফ২.১)	দৈনন্দিন জীবনে আপনি কি যথেষ্ট শক্তি পান?	১	২	৩	৪	৫
১১(এফ৭.১)	আপনি কি আপনার শরীরের গঠন নিয়ে সন্তুষ্ট?	১	২	৩	৪	৫

১২(এফ১৮.১)	আপনার কি প্রয়োজন মেটাতে যথেষ্ট টাকা আছে?	১	২	৩	৪	৫
১৩(এফ২০.১)	আপনি কি দৈনন্দিন জীবন যাপনের জন্য প্রয়োজনীয় তথ্য পান?	১	২	৩	৪	৫
১৪(এফ২১.১)	অবসর কাটানোর/বিনোদনের সুযোগ আপনার কতোটুকু আছে?	১	২	৩	৪	৫

		খুব খারাপ	খারাপ	ভাল ও না মন্দ ও না	ভাল	খুব ভাল
১৫(এফ৯.১)	আপনি কতটা ভালভাবে চলাফেরা করতে পারেন?	১	২	৩	৪	৫

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্ট ও নয় অসন্তুষ্ট ও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
১৬(এফ৩.৩)	আপনার ঘুম নিয়ে আপনি কতোটুকু সন্তুষ্ট?	১	২	৩	৪	৫
১৭(এফ১০.৩)	দৈনন্দিন কাজ করার ক্ষমতা নিয়ে আপনি কতোটুকু সন্তুষ্ট?	১	২	৩	৪	৫
১৮(এফ১২.৪)	আপনার কাজ করতে পারার ক্ষমতা নিয়ে আপনি কতোটুকু সন্তুষ্ট?	১	২	৩	৪	৫
১৯(এফ৬.৩)	আপনি নিজেকে নিয়ে কতোটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২০(এফ১৩.৩)	আপনার ব্যক্তিগত জীবন নিয়ে আপনি কতোটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২১(এফ১৫.৩)	আপনার যৌন জীবন নিয়ে আপনি কতোটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২২(এফ১৪.৪)	বন্ধুদের সহযোগিতা পাওয়ার ক্ষেত্রে আপনি কতোটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২৩(এফ১৭.৩)	আপনি আপনার বাসস্থানের অবস্থা নিয়ে কতোটুকু সন্তুষ্ট?	১	২	৩	৪	৫
২৪(এফ১৯.৩)	আপনি যে স্বাস্থ্যসেবা পান তাতে কি সন্তুষ্ট?	১	২	৩	৪	৫
২৫(এফ২৩.৩)	আপনি আপনার যাতায়াত নিয়ে কতোটুকু সন্তুষ্ট?	১	২	৩	৪	৫

		কখনো না	কখনো কখনো	মাঝে মাঝে	প্রায়শঃই	সব সময়
২৬(এফচ.১)	আপনার কি প্রায়শই হতাশা, উদ্বেগ অবসন্নতা এই সব নেতিবাচক অনুভূতি হয়?	১	২	৩	৪	৫



বাংলাদেশ হেল্থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)

(The Academic Institute of CRP)

Ref: CRP/BHPI/IRB/03/2023/715

Date: 13/03/2023

To
Imtiaz Ahmed
B.Sc. in Physiotherapy,
Session: 2017-2018, DU Reg. No: 8657
BHPI, CRP, Savar, Dhaka- 1343, Bangladesh

Subject: Approval of the dissertation proposal “**Influence of Anxiety, Depression and Stress on the Physiotherapy Treatment Outcomes among the patients with Low back pain attended at Centre for the Rehabilitation of the Paralyzed (CRP), Savar**”- by ethics committee.

Dear
Imtiaz Ahmed,
Congratulations

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the Principal Investigator Dr. Shamima Islam Nipa, Lecturer, Department of Rehabilitation Science, BHPI, as dissertation supervisor. The following documents have been reviewed and approved:

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

The purpose of the study is to find out the influence of anxiety, depression and stress for the patients with low back pain on Physiotherapy Treatment Outcome Attended at CRP. Should there any interpretation, typo, spelling, grammatical mistakes in the title, it is the responsibilities of the investigator. Since the study involves questionnaire that takes maximum 20- 25 minutes and have no likelihood of any harm to the participants. The members of the Ethics committee approved the study to be conducted in the presented form at the meeting held at 09:00 AM on January 9, 2023 at BHPI, 34th IRB Meeting.

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

Best regards,

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

Date: May 27, 2023

To

The Head
Department of Physiotherapy
Centre for the Rehabilitation of the Paralyzed (CRP)
Chapain, Savar, Dhaka-1343

Through: Head, Department of Physiotherapy, BHPI

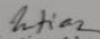
Subject: Prayer for seeking permission to collect data for conducting an undergraduate research Project.

Dear Sir,

With due respect and humble submission to state that I am Imtiaz Ahmed, a student of 4th year B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI), an academic institute of the Centre for the Rehabilitation of the Paralyzed (CRP). The Ethical committee has approved my research project entitled: "Influence of Anxiety, Depression and Stress for the patients with Low Back Pain on physiotherapy treatment outcome attended at Centre for the Rehabilitation of the Paralyzed (CRP), Savar" under the supervision of Dr. Shamima Islam Nipa, Lecturer, Department of Rehabilitation Science. Conducting this research project is partial fulfillment of the requirement for the degree of B.Sc. in Physiotherapy. I want to collect data for my research project from the department of Physiotherapy. So, I need your kind permission for Data collection at Musculo-skeletal unit of CRP at (Savar centre, Dhaka). I would like to assure that nothing of the study would be harmful for the participants.


I therefore, pray and hope that your honor would be kind enough to grant my application and give me permission for data collection and oblige thereby.

Sincerely,

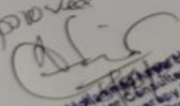

Imtiaz Ahmed

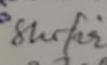
4th Year
B.Sc. in Physiotherapy
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