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Knowledge and associated factor of low back pain patients: A cross sectional study

Submitted by:

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Acronym

BHPI: Bangladesh Health Profession's Institute

CBT: Cognitive Behavioral Therapy

CLBP: Chronic Low Back Pain

CRP: Centre for the Rehabilitation of the Paralysed

HBM: Health Belief Model

IRB: Institutional Review Board

LBP: Low Back Pain

LBP_KQ: Low Back Pain Knowledge Questionnaire

PNE: Pain Neuroscience Education

SPSS: Statistical Package for the Social Sciences

WMSDs: Work-related Musculoskeletal Disorders

YLDs: Years Lived with Disability

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Abstract

Background: Low back pain (LBP) is a major contributor to global disability, affecting people of all ages and occupations. Persistent LBP places a significant burden on healthcare systems, reduces work productivity, and diminishes quality of life. Although modifiable risk factors, such as physical inactivity, poor ergonomics, and obesity, are widely recognized, public awareness and preventive behavior remain inconsistent. Common misconceptions, including the overreliance on rest and painkillers, continue to obstruct effective management. **Objectives:** This study aimed to assess LBP knowledge and identify associated factors among patients in Bangladesh. Specific objectives included evaluating knowledge levels, examining correlations between demographics and lifestyle, identifying misconceptions, analyzing preventive behaviors, and assessing the roles of education and healthcare accessibility**. Methodology**: A cross-sectional study was conducted at the Centre for the Rehabilitation of the Paralysed (CRP) in Savar, Bangladesh. A total of 120 adult patients diagnosed with LBP were selected through convenience sampling. Data were collected via structured face-to-face interviews using the validated Low Back Pain Knowledge Questionnaire (LBPKQ). Descriptive statistics (means, SDs, percentages) and inferential tests (chi-square) were used to analyze associations between knowledge and other variables using SPSS. **Results:** The mean age was 35.6 years (SD=11.6), with 57.5% male participants. Most (63.3%) were urban residents, and 80.8% had education above the secondary level. The mean LBPKQ score was 9.11/24 (SD=3.53), indicating moderate knowledge. Pain was reported daily by 66.7%, and 60% sat for more than 6 hours/day. Significant associations were observed between pain frequency and both occupation ($p<0.001$) and sedentary behavior ($p<0.001$). Only 4.2% used ergonomic tools, while 44.2% did not adjust posture during work. Stress was recognized by 55.8% as a pain trigger. **Discussion:** The study reveals moderate LBP knowledge but critical gaps in ergonomics and preventive practices. Sedentary lifestyles, inadequate workplace setups, and persistent misconceptions were significant contributors. Interventions must focus on ergonomic training, awareness campaigns, and psychosocial support.

Keywords: *Low back pain, health literacy, ergonomics, sedentary lifestyle, occupational health, Bangladesh.*

Chapter - I Introduction

1.1 Background

Low back pain (LBP) is a highly prevalent musculoskeletal disorder that significantly contributes to global disability, affecting individuals regardless of age, socioeconomic status, or occupation (Vos et al., 2021). It is one of the most common reasons for seeking medical attention, leading to functional limitations and a reduced quality of life. LBP can be classified into three categories based on its duration: acute (lasting less than six weeks), subacute (persisting for six to twelve weeks), and chronic (extending beyond twelve weeks) (Hartvigsen et al., 2018). While many cases of LBP resolve spontaneously without the need for extensive medical intervention, persistent or chronic LBP remains a significant public health concern. It imposes a substantial burden on individuals and society by contributing to prolonged disability, increased dependence on healthcare services, and rising medical costs. The societal impact of LBP is particularly concerning because it affects both personal well-being and economic productivity, making it a major global health challenge (Rahman et al., 2023).

Globally, LBP consistently ranks as a leading cause of years lived with disability (YLDs), significantly affecting workforce productivity and straining healthcare systems (Maher et al., 2017). In both high-income and low-income countries, LBP has profound socioeconomic implications. In high-income nations, the high cost of medical treatments, physical therapy, and workplace absenteeism due to LBP places a considerable financial strain on healthcare infrastructure and insurance systems. Conversely, in low-income nations, limited access to healthcare services, lack of awareness regarding preventive strategies, and physically demanding occupations exacerbate the prevalence and impact of LBP. The economic burden of LBP extends beyond direct medical expenses to include indirect costs such as lost wages, decreased work efficiency, and long-term disability compensation. Moreover, the persistent nature of chronic LBP often leads to psychological distress, including depression and anxiety, further compounding the negative effects on an individual's quality of life (Al-Muqayadat et al., 2021). Several modifiable risk factors contribute to the development and persistence of LBP. One of the most significant factors is a sedentary lifestyle, which has become increasingly prevalent due to

modern work environments that involve prolonged sitting and minimal physical activity. Poor ergonomic practices, such as inadequate workstation setups and improper posture, further increase the likelihood of developing LBP. Occupational ergonomic stressors, including repetitive lifting, prolonged standing, and physically demanding tasks, are also major contributors, particularly in jobs that require frequent manual handling of heavy objects. Additionally, obesity has been identified as a key risk factor, as excess body weight places increased stress on the lower back, leading to musculoskeletal strain and pain. Physical inactivity further exacerbates the problem by weakening core muscles, reducing spinal stability, and making individuals more susceptible to back injuries. Although these risk factors are well-documented, public awareness and adherence to preventive strategies remain inconsistent, contributing to the persistent prevalence of LBP (Alsharif et al., 2025).

A critical component in addressing LBP is improving health literacy, as informed individuals are more likely to adopt preventive behaviors that reduce the risk of developing chronic pain. Understanding the importance of proper ergonomics, engaging in regular physical activity, and seeking timely medical attention are essential aspects of LBP prevention and management (Slater et al., 2019). However, several misconceptions about LBP continue to hinder effective management and recovery. One of the most common myths is the belief that prolonged rest is the best treatment for LBP. While short periods of rest may provide temporary relief, excessive inactivity can lead to muscle deconditioning, joint stiffness, and prolonged disability (Hartvigsen et al., 2018).

Another widespread misconception is the overreliance on pain medications, particularly opioids, which may provide short-term pain relief but do not address the underlying causes of LBP. Long-term reliance on medication can also lead to dependency and other adverse effects. Additionally, fear-avoidance behavior—where individuals refrain from physical activity due to fear of worsening their pain—can contribute to further deconditioning and chronic pain. Addressing these misconceptions through public education and healthcare interventions is crucial in reducing the burden of LBP (Kim et al., 2023).

To mitigate the impact of LBP, a multifaceted approach is necessary, combining education, lifestyle modifications, and evidence-based medical interventions.

Workplace ergonomics play a vital role in prevention, as proper workstation adjustments, lumbar support, and correct lifting techniques

can significantly reduce the risk of occupational LBP. Regular physical activity, including exercises that strengthen core muscles and improve flexibility, has been shown to be one of the most effective ways to prevent and manage LBP. Activities such as yoga, Pilates, and swimming can enhance spinal stability and reduce the likelihood of recurrent pain episodes. Encouraging individuals to maintain proper posture during daily activities, such as sitting, standing, and lifting, can also help minimize spinal strain. Early intervention is another key aspect of effective LBP management. Seeking timely medical attention and engaging in multidisciplinary care—including physical therapy, cognitive-behavioral therapy (CBT), and lifestyle adjustments—can prevent acute LBP from progressing into a chronic condition (Nonvignon et al., 2022).

In addition to conventional treatments, mind-body approaches such as mindfulness meditation, relaxation therapy, and stress management techniques can help reduce pain perception and improve overall well-being. Psychological factors play a significant role in chronic pain conditions, and addressing stress and anxiety can contribute to better pain management outcomes. Healthcare professionals should emphasize patient education and self-management strategies, empowering individuals to take an active role in their recovery. Public health campaigns that promote awareness of LBP risk factors, preventive strategies, and evidence-based treatments can further contribute to reducing the burden of this condition on society (Pereira et al., 2023).

In conclusion, low back pain is a widespread and complex health issue with significant personal, social, and economic consequences. While many cases of acute LBP resolve on their own, chronic LBP continues to challenge healthcare systems and workforce productivity worldwide. The persistent nature of LBP highlights the importance of addressing modifiable risk factors, dispelling common misconceptions, and promoting preventive measures through improved health literacy. By encouraging ergonomic interventions, regular physical activity, and timely medical consultation, individuals can reduce their risk of developing LBP and improve their overall spinal health (Rahman et al., 2023). A proactive approach to LBP prevention and management, supported by healthcare providers and public health initiatives, is essential in mitigating its long-term impact and enhancing quality of life for affected individuals.

1.2 Rationale

Despite advances in LBP research, disparities in public knowledge persist, particularly in underserved regions with limited access to healthcare education (Maher et al., 2017). Evidence suggests elevated health literacy correlates with proactive health behaviors and improved musculoskeletal outcomes (Slater et al., 2019). Conversely, misinformation or inadequate awareness may prolong disability, underscoring the need for targeted educational interventions.

Occupational demands significantly influence LBP epidemiology. High-risk groups, such as manual laborers and healthcare workers, face heightened exposure to biomechanical stressors, while sedentary occupations correlate with increased incidence due to prolonged sitting (Hoy et al., 2014). Assessing population-specific knowledge of these risks can inform workplace safety protocols and preventive health strategies.

Furthermore, sociodemographic variables—including age, gender, educational attainment, and economic standing—may shape LBP-related knowledge and health-seeking behaviors (Dagenais et al., 2008). Understanding these associations is vital for designing equitable, context-sensitive interventions.

This study evaluates LBP knowledge levels and their determinants within a defined population. By elucidating gaps linked to demographic, occupational, and lifestyle factors, findings may guide the development of tailored educational initiatives and preventive frameworks to mitigate LBP's global burden.

1.3 Research Question

The study seeks to answer the following research question: What is the level of knowledge about low back pain among the study population, and what factors are associated with it?

1.4 Objectives

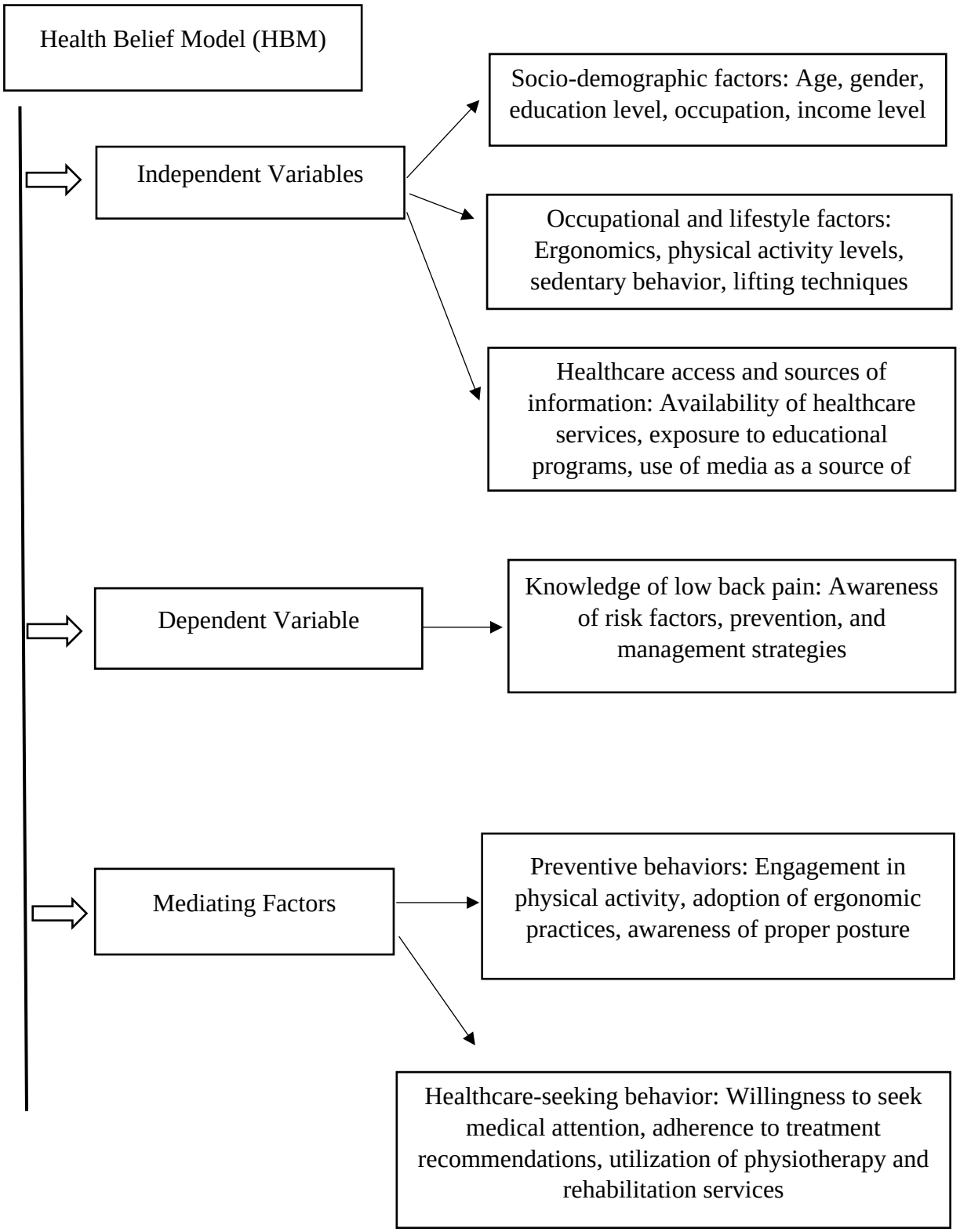
1.4.1. General Objective

To assess the level of knowledge and associated factors of low back pain in a selected population.

1.4.2. Specific Objectives

i. To determine the level of knowledge about low back pain among the study population.
ii. To identify demographic, occupational, and lifestyle factors associated with knowledge of low back pain.
iii. To assess the relationship between knowledge of low back pain and preventive practices.
iv. To know the influence of education and healthcare access on knowledge about low back pain.
v. To explore common misconceptions and beliefs regarding low back pain and its management.

1.5 Conceptual Framework



1.6 Operational Definitions

Low Back Pain (LBP): A condition characterized by pain, stiffness, or discomfort localized in the lower back region, with or without radiation to the lower limbs (Hartvigsen et al., 2018).

Knowledge about LBP: Awareness and understanding of the causes, risk factors, prevention, and management of LBP, assessed through a structured questionnaire.

Ergonomics: The study of people's efficiency in their working environment, specifically how workplace setup and posture affect musculoskeletal health (Maher et al., 2017).

Sedentary Lifestyle: A type of lifestyle with little or no physical activity, including prolonged sitting or inactivity for extended periods (Slater et al., 2019).

Healthcare-Seeking Behavior: The actions individuals take when experiencing LBP, including consulting healthcare professionals, using home remedies, or avoiding treatment (WORK Consortium, 2010).

Preventive Measures: Actions taken to reduce the risk of LBP, including maintaining good posture, regular exercise, and using proper lifting techniques (WORK Consortium, 2010).

Expanded Theoretical Context: The HBM is supplemented with social determinants of health to contextualize disparities in LBP knowledge (e.g., income inequality limiting access to ergonomic resources) (Williams et al., 2020).

Measurement Tools: The use of a 5-point Likert scale in the questionnaire to quantify agreement with LBP-related statements (e.g., "Heavy lifting directly causes chronic LBP").

Cultural Considerations: Inclusion of qualitative interviews to explore region-specific beliefs (e.g., attributing LBP to "cold winds" or spiritual causes) that may conflict with biomedical advice (Williams et al., 2020).

Policy Implications: Emphasis on translating findings into workplace ergonomic guidelines and public health campaigns targeting high-risk groups (e.g., manual laborers, office workers).

Chapter II Literature Review

Low back pain (LBP) stands as one of the most prevalent global health challenges, affecting approximately 568 million people worldwide, with lifetime prevalence rates exceeding 70% in adults (Vos et al., 2020). The burden of LBP spans across geographic, economic, and occupational boundaries, disproportionately affecting individuals engaged in physically demanding occupations—such as construction, healthcare, and agriculture—as well as sedentary workers in both industrialized and developing nations (Hartvigsen et al., 2018). The complexity of LBP arises from its multifactorial etiology, incorporating biomechanical, psychosocial, and socioeconomic determinants (Maher, Underwood and Buchbinder, 2017).

Low back pain (LBP) is a prevalent and complex health issue affecting a significant portion of the global population. Among the many contributing factors, biomechanical elements have been recognized as key determinants in the onset and progression of LBP. These factors primarily include repetitive strain, improper lifting techniques, and sustained sedentary postures, all of which place excessive stress on the musculoskeletal system. As Shariat et al. (2020) highlight, these mechanical stresses, when repeated or sustained over time, can lead to tissue damage, muscle fatigue, and joint dysfunction, ultimately resulting in the manifestation of LBP (Tanaka et al., 2022).

Repetitive strain is particularly problematic in occupational settings where certain movements are performed frequently throughout the day. Tasks that involve consistent bending, lifting, or twisting movements can lead to cumulative trauma in the lower back region. Such repeated microtrauma gradually overwhelms the musculoskeletal system's ability to repair itself, making the structures of the lower back, including muscles, intervertebral discs, ligaments, and facet joints, more susceptible to injury. Even in the absence of a single traumatic event, the ongoing wear and tear can cause persistent pain and functional limitations. Improper lifting techniques are another major biomechanical contributor to LBP. Many individuals, especially those in physically demanding occupations, often lift heavy objects without using proper body mechanics. For instance, bending at the waist instead of squatting down, twisting the spine during lifting, or failing to engage the core muscles can significantly increase the mechanical load on the lumbar spine. This can result in disc herniation, muscle strain, or ligament sprain. Proper lifting involves using the legs and hips

to bear the load, maintaining a neutral spine, and avoiding sudden, jerky movements. Unfortunately, due to lack of training or awareness, many workers continue to lift improperly, increasing their risk of injury (Hu et al., 2022).

Prolonged sedentary postures also play a substantial role in the development of LBP, especially in modern office-based work environments. Extended sitting, particularly with poor ergonomics, leads to the shortening and weakening of key muscle groups, such as the hip flexors, hamstrings, and lower back extensors. Over time, these muscular imbalances can result in postural dysfunction, spinal misalignment, and increased stress on the lumbar vertebrae. Moreover, static sitting reduces blood flow and nutrient delivery to spinal discs, making them more prone to degeneration. Sedentary workers often exhibit forward head posture, rounded shoulders, and slouched lower backs—each of which exacerbates the strain on the lumbar spine (Pereira et al., 2023).

Certain professions are more vulnerable to biomechanical stressors that lead to LBP. For example, construction workers and nurses are frequently exposed to physical tasks that involve heavy lifting, pushing, pulling, and awkward body positions. As Da Costa and Vieira (2010) discuss, these occupational demands significantly increase the likelihood of developing LBP. Construction workers often perform their duties in uncontrolled environments with uneven surfaces, leading to unpredictable stress on the spine. Nurses, on the other hand, are regularly involved in patient handling tasks, which include lifting or repositioning patients without adequate support or equipment. These scenarios often result in acute injuries or contribute to the cumulative effects of repeated biomechanical loading. On the opposite end of the spectrum, sedentary occupations—such as office work, long-distance driving, and computer-based jobs—also pose a significant risk. While they may appear less physically taxing, these jobs contribute to LBP through prolonged static postures, lack of physical movement, and suboptimal workstation ergonomics. Lis et al. (2007) emphasized that individuals in sedentary roles often report chronic LBP due to insufficient postural variation and ergonomic mismatches, such as chairs without lumbar support or improperly positioned computer screens. Additionally, these workers may lack physical activity outside work, leading to poor muscular endurance and decreased spinal stability (Pereira et al., 2023).

To mitigate the biomechanical risks associated with LBP, a combination of ergonomic interventions, physical conditioning, and education is essential. Ergonomic adjustments, such as adjustable chairs, sit-stand desks, and proper lifting aids, can significantly reduce the mechanical

strain on the back. Furthermore, incorporating regular movement breaks, stretching exercises, and core strengthening routines can enhance muscular balance and spinal support. Education on body mechanics, lifting strategies, and posture awareness should be integral components of occupational health programs. In conclusion, biomechanical factors are central to the development of low back pain, affecting individuals across various professions and lifestyles. Whether through repetitive motion, improper lifting, or extended sitting, the mechanical stresses placed on the lumbar spine can lead to acute or chronic pain. Addressing these factors through proactive strategies is crucial for preventing LBP and promoting long-term musculoskeletal health (Tanaka et al., 2022).

Beyond physical stressors, psychosocial factors—including anxiety, depression, and fear-avoidance behaviors—exacerbate pain perception and disability in LBP patients (Pincus et al., 2002). The fear of movement (kinesiophobia) often results in reduced physical activity, muscular deconditioning, and prolonged disability (Luque-Suarez et al., 2019). Additionally, socioeconomic disparities, such as limited healthcare access, low health literacy, and occupational inequities, compound barriers to effective management, disproportionately affecting lower-income populations who may lack access to early intervention and rehabilitative care (Dionne et al., 2011). These factors collectively complicate prevention strategies and therapeutic interventions, often leading to suboptimal outcomes and chronicity (Foster et al., 2018).

A critical yet underresearched component of LBP management is patient knowledge, which includes an understanding of anatomy, pathophysiology, evidence-based treatments, and self-management strategies (O'Sullivan et al., 2016). Emerging evidence suggests that knowledge gaps among patients are correlated with poor treatment adherence, delayed functional recovery, and an increased risk of chronicity (Bunzli et al., 2017). For instance, misconceptions regarding rest versus activity may lead to avoidance of beneficial movement, thereby perpetuating disability and muscle deconditioning (Slater et al., 2012). Similarly, a lack of awareness regarding ergonomic

practices and pain neuroscience may hinder effective self-care strategies (Moseley, 2004).

Despite the significance of patient knowledge, it remains understudied due to variability in assessment tools and the absence of standardized metrics, limiting comparative analyses across different populations (Darlow et al., 2014). This knowledge deficit complicates clinical decision-making, as many patients continue to rely on outdated or incorrect information regarding LBP management (O'Sullivan et al., 2018).

This literature review synthesizes findings from cross-sectional studies conducted in diverse regions, including high, middle, and low-income countries, to evaluate LBP knowledge levels and their associated factors (Hartvigsen et al., 2018). Sociodemographic variables such as age, education level, and income consistently emerge as key predictors of knowledge, with lower socioeconomic status linked to higher levels of misinformation and lower self-efficacy in pain management (Dionne et al., 2011). Additionally, clinical factors, including pain duration and severity, also influence patient understanding of LBP; chronic sufferers often exhibit resignation or therapeutic nihilism, reducing their likelihood of engaging in active self-management (Kamper et al., 2015). Psychosocial determinants, such as depression and low social support, further distort health-seeking behaviors and affect information retention, making it more difficult for patients to adopt evidence-based self-management strategies (Main and George, 2011). Moreover, cultural perceptions of pain and differences in healthcare provider communication styles introduce regional variations in knowledge dissemination and patient engagement (Lin et al., 2021).

Despite advancements in understanding LBP epidemiology and treatment, critical gaps persist in the literature. A major limitation is that most studies originate from high-income Western contexts, neglecting low-resource settings where the LBP burden is rising (Hartvigsen et al., 2018). Additionally, the interaction between socioeconomic status and clinical factors remains underexplored, limiting the ability to design targeted educational interventions (Kamper et al., 2015). This review underscores the need for culturally tailored patient education programs and standardized knowledge assessment frameworks to bridge these gaps. By elucidating the sociodemographic and clinical determinants of patient knowledge, this synthesis aims to inform more effective, patient-centered interventions to reduce health disparities and mitigate the global

disability burden of LBP (Foster et al., 2018). Future research should prioritize longitudinal studies to establish causal relationships between patient knowledge, adherence, and clinical outcomes, while also evaluating the effectiveness of knowledge-enhancing interventions in reducing LBP chronicity (Darlow et al., 2014).

Low back pain (LBP) remains the leading cause of disability worldwide, with approximately 619 million reported cases in 2020. Projections indicate this figure will rise to 843 million by 2050, driven largely by aging populations and increasingly sedentary lifestyles (Global Burden of Disease Study, 2020; Hartvigsen et al., 2018). In South Korea, chronic LBP (CLBP) affects 15.8%

of adults, with notable prevalence disparities observed among women (24.5%) and individuals aged ≥65 years. These variations are attributed to factors such as hormonal fluctuations, higher rates of osteoporosis, and physically demanding caregiving roles (Korean National Health and Nutrition Examination Survey, 2021; Park et al., 2020). Occupational hazards further exacerbate this burden, particularly in healthcare sectors. For example, a study of Palestinian nurses revealed a 12-month LBP prevalence of 78%, linked to prolonged standing, repetitive patient handling, and insufficient ergonomic training (Al-Muqayadat et al., 2021). Such findings underscore the necessity for tailored interventions targeting high-risk demographics, including older adults, women, and workers in physically strenuous occupations.

A key challenge in mitigating LBP-related disability lies in widespread patient misconceptions about its etiology, evidence-based therapies, and self-management practices. A Jordanian cross-sectional study utilizing the validated Low Back Pain Knowledge Questionnaire (LBP_KQ) reported a mean score of 9.29/24 among participants, highlighting significant knowledge gaps in anatomical understanding, biomechanics, and treatment protocols (Alghwiri et al., 2022). These deficits often correlate with counterproductive health behaviors, such as overreliance on passive interventions (e.g., prolonged bed rest) and fear-avoidance of physical activity—practices that conflict with modern clinical guidelines promoting graded exercise and physiotherapy (Vlaeyen et al., 2016; Saragiotto et al., 2016). For instance, 62% of patients in a Nigerian study incorrectly identified rest as the optimal treatment, resulting in extended disability and heightened healthcare dependency (Ojoawo et al., 2020). Socioeconomic and educational inequalities further compound these issues. A Saudi

Arabian multivariate analysis revealed that individuals with bachelor's degrees or higher demonstrated significantly superior LBP knowledge (β = 2.270, *p* < 0.001), likely due to greater health literacy and access to credible resources (Alshami et al., 2021). Conversely, employed participants scored lower (β = -1.422, *p* = 0.008), potentially due to time limitations restricting engagement with educational content or workplace environments prioritizing efficiency over health (Alghwiri et al., 2022).

Psychosocial determinants further influence the assimilation and application of LBP-related knowledge. Depression and anxiety, prevalent in 30–40% of CLBP patients, impede cognitive processing of health information and may foster therapeutic pessimism (Williams et al., 2020). Cultural norms also shape health-seeking behaviors; in rural India, 45% of LBP patients preferred

traditional healers over biomedical care, citing distrust in clinical treatments or financial constraints (Yadav et al., 2019). Clinician communication styles additionally impact patient understanding: 68% of participants in a U.S. study reported that hurried consultations and overly technical explanations hindered their comprehension of LBP management strategies (Fritz et al., 2021). Collectively, these systemic barriers emphasize the imperative for culturally sensitive, patient-centric educational initiatives. Emerging research demonstrates the efficacy of targeted interventions in addressing knowledge gaps. A Brazilian randomized controlled trial found that a 6-week digital education program elevated LBP_KQ scores by 32% and reduced disability indices by 18% compared to conventional care (Pereira et al., 2023).

Similarly, ergonomic training for Swedish nurses decreased LBP incidence by 27% by addressing biomechanical risks and promoting proactive self-care (Nordander et al., 2020). However, scaling such interventions remains challenging in resource-limited settings, where digital infrastructure and specialist access are scarce. Community-driven peer-led workshops in Ghana achieved a 40% improvement in knowledge retention, illustrating the potential of low-cost, localized approaches (Nonvignon et al., 2022). These findings advocate for adaptable, context-specific strategies to alleviate the global LBP burden.

Low back pain (LBP) is a prevalent global health issue, with approximately 568 million individuals affected worldwide, making it a leading cause of disability across diverse populations (Hartvigsen et al., 2018). The increasing burden of LBP is not only

influenced by biomechanical and occupational factors but also by education, socioeconomic status, psychological well-being, and healthcare access (Maher, Underwood and Buchbinder, 2017). Studies suggest that higher educational attainment correlates with better knowledge of LBP, which in turn influences self-management practices, adherence to evidence-based treatments, and health-seeking behaviors (Darlow et al., 2014). However, employment status, job-related risks, chronic pain duration, and mental health conditions further complicate LBP outcomes, often leading to disparities in pain management strategies (Foster et al., 2018). This paper explores the complex relationship between education, occupation, psychological factors, and healthcare accessibility in shaping LBP knowledge and management strategies across diverse populations.

Educational attainment plays a crucial role in determining an individual's understanding of LBP, self-care behaviors, and treatment adherence. Research conducted in Jordan demonstrated that

patients with diploma-level education ($\beta = 1.202$, $p < 0.001$) and university degrees ($\beta = 2.270$, $p < 0.001$) scored significantly higher on the LBP Knowledge Questionnaire (LBP_KQ) compared to individuals with lower educational levels (Al-Sayegh et al., 2022). This discrepancy is largely attributed to greater health literacy, better access to scientific resources, and a higher likelihood of seeking professional guidance (Slater et al., 2012). Educated individuals are more likely to explore ergonomic principles, physiotherapy, and exercise-based interventions, thereby reducing dependence on passive treatments like bed rest and opioid medications (Moseley, 2004).

Conversely, low educational levels are often associated with misconceptions regarding LBP etiology and treatment, which can perpetuate chronic disability and functional limitations (Dionne et al., 2011). For instance, individuals with limited formal education frequently believe that LBP is an unavoidable consequence of aging or irreversible spinal damage, leading to fear-avoidance behaviors, physical inactivity, and prolonged disability (Pincus et al., 2002). The lack of accurate knowledge among these populations highlights the need for structured patient education programs, particularly those tailored to low-literacy and underserved communities (Darlow et al., 2014).

Employment status and job type significantly impact an individual's awareness, prevention strategies, and management of LBP. In Jordan, employed individuals

exhibited lower LBP_KQ scores (β = -1.422, p = 0.008), suggesting that workplace constraints—such as time limitations, exposure to high-risk environments, and normalization of pain—may hinder knowledge acquisition (Al-Sayegh et al., 2022). Specific occupational groups, including healthcare workers, factory employees, and labor-intensive workers, experience higher LBP prevalence due to their repetitive physical demands, poor ergonomic conditions, and lack of preventative training (Da Costa and Vieira, 2010). For example, nurses in Bangladesh and Palestine report LBP prevalence rates between 51.9% and 78%, largely due to manual patient handling, frequent bending, and extended shifts (Rahman et al., 2021). Despite their daily exposure to occupational hazards, healthcare workers often receive minimal education on safe body mechanics and injury prevention, increasing their susceptibility to LBP (Foster et al., 2018). Similarly, textile workers in Egypt, who engage in prolonged standing, repetitive movements, and inadequate ergonomic support, demonstrate high rates of chronic LBP (CLBP), yet workplace interventions remain rare (Shariat et al., 2020). These findings underscore the urgent need for job-specific educational initiatives to improve workplace ergonomics and minimize occupational LBP risk.

Despite the higher prevalence of CLBP in women and older adults, their knowledge levels often remain disproportionately low compared to their risk profiles (Hartvigsen et al., 2018). Women exhibit greater LBP prevalence (24.5% vs. 11.8% in men) due to biological factors (e.g., osteoporosis, hormonal influences) and occupational roles (e.g., caregiving, domestic labor) (Slater et al., 2012). However, gender-specific educational interventions are rarely implemented, leaving women with limited access to preventive knowledge and rehabilitation services (Lin et al., 2021). Older adults, meanwhile, face compounded risks due to degenerative spinal changes, arthritis, and comorbidities, yet they are less likely to utilize digital health resources or educational materials (Darlow et al., 2014). This gap highlights the importance of community-based interventions, such as workshops targeting elderly populations, to enhance LBP knowledge and self-management strategies (Moseley, 2004).

Chronic pain duration is strongly associated with depressive symptoms (OR = 3.09, p < 0.001) and reduced self-efficacy, impairing knowledge retention and engagement with treatment plans (Bunzli et al., 2017). Patients experiencing severe pain (high NPRS scores) often prioritize immediate symptom relief over long-term management, neglecting education-based interventions (Luque-Suarez et al., 2019). Moreover,

anxiety and depression significantly hinder learning capacity; in Jordan, higher DASS Anxiety scores correlated with lower LBP_KQ scores ($\beta = -0.144$, $p = 0.003$), while in China, CLBP patients with depressive symptoms exhibited 25% lower adherence to physiotherapy regimens (Al-Sayegh et al., 2022; Lin et al., 2021).

The fear-avoidance model further complicates LBP outcomes, as individuals with chronic pain often develop movement-related fear, leading to prolonged inactivity, muscle deconditioning, and worsening disability (Pincus et al., 2002). Addressing these psychological barriers through cognitive-behavioral therapy (CBT) and pain neuroscience education (PNE) has shown promise in enhancing patient knowledge and reducing disability (Moseley, 2004).

Interestingly, the use of pain medication is associated with higher LBP knowledge scores ($\beta = 1.180$, $p = 0.026$), possibly due to increased interactions with healthcare providers (Al-Sayegh et al., 2022). However, overreliance on passive therapies, such as opioid medications and bed rest, can reinforce misconceptions about pain management, leading to functional decline and prolonged disability (Foster et al., 2018). For instance, patients prescribed opioids often neglect physical therapy and core-strengthening exercises, exacerbating long-term mobility issues (Maher, Underwood and Buchbinder, 2017).

Integrating pharmacotherapy with biopsychosocial education—as demonstrated in nurse-led interventions in Egypt—has shown improvements in pain outcomes and self-efficacy (Shariat et al., 2020).

Strong family support mitigates depressive symptoms (OR = 0.25, $p < 0.001$) and enhances pain self-efficacy, facilitating better knowledge application (Bunzli et al., 2017). Conversely, low-income groups face multiple barriers, including social isolation, financial stress, and limited access to physiotherapy or ergonomic aids (Dionne et al., 2011). Community-based biopsychosocial programs in Ghana have successfully improved CLBP outcomes by addressing economic and psychosocial stressors (Lin et al., 2021). Policies aimed at subsidizing ergonomic workplace equipment and expanding healthcare accessibility could play a vital role in reducing LBP-related disparities (Hartvigsen et al., 2018).

LBP knowledge is shaped by education, employment, psychological factors, and socioeconomic conditions. While higher education correlates with improved LBP

awareness, factors such as occupational risks, chronic pain duration, and mental health disorders hinder effective self-management. Addressing these disparities requires culturally tailored educational interventions, workplace ergonomic programs, and mental health support. Future research should prioritize longitudinal studies to assess the impact of knowledge-enhancing interventions on long-term LBP outcomes.

CHAPTER III METHODOLOGY

3.1 Study design

This study will adopt a cross-sectional research design to assess the level of knowledge and associated factors of low back pain (LBP) among patients. A cross-sectional study design is appropriate as it allows for the evaluation of multiple variables at a single point in time, providing a snapshot of the knowledge and factors related to LBP within the target population. The design is well-suited for determining prevalence rates, identifying potential correlates, and examining associations between knowledge levels and demographic, lifestyle, and clinical factors in a cost-effective and time-efficient manner.

3.2 Study setting and population

This study was conducted in Savar CRP, Bangladesh. 6 musculoskeletal unit of Savar CRP were covered for data collection for low back pain patients: Adults (≥18 years) clinically diagnosed with LBP by a physician.

3.3 Data collection procedure:

Data was gathered through face-to-face interviews using specialized questionnaires related to low back pain. Each individual's data collection process typically lasted around 15 to 20 minutes.

Pilot Study: Before commencing the main data collection, a pilot study involving 10 participants was conducted. The pilot study served as a preparatory phase to refine the data collection procedure. It allowed the researchers to identify and address any challenges that might arise during questioning. Moreover, it facilitated the creation of a preliminary plan for structuring the questions and determining if any modifications were required for the questionnaire. Through the pilot study, the researchers gained valuable insights on how best to collect data and develop an effective approach for the actual data collection process.

3.4 Data collection tools:

Information was obtained through the utilization of tailored questionnaires concerning low back pain. The Low Back Pain Knowledge Questionnaire (LBPKQ) was used

which is a structured assessment tool designed to evaluate individuals' understanding of low back pain (LBP), including its causes, risk factors, prevention, and management strategies. It typically consists of multiple-choice or Likert-scale questions covering key domains such as anatomical knowledge, common misconceptions, appropriate treatment approaches, ergonomic principles, and the impact of lifestyle factors on LBP. The questionnaire aims to identify knowledge gaps among patients, healthcare providers, or the general population, enabling targeted educational interventions. A standardized scoring system is often used, where higher scores indicate better knowledge. Validated versions of the LBPKQ are frequently employed in epidemiological studies and clinical settings to assess the effectiveness of educational programs and guide public health initiatives for reducing the burden of LBP.

3.5 Study Population and Sampling

Population: It is the set of all observable items or occurrences on which the research is conducted.

Sample: A sample is a representative part of a population. For this research, the study population is low back pain patients visiting Savar CRP for physiotherapy treatment. Data was collected from January 2025 to March 2025.

Sampling technique: The sample was selected through a convenience sampling method for conducting this study. A convenience sample is a group of individuals who (conveniently) were available for study.

3.6 Sample size

The equation of sample size calculation is given below:

$$n = \frac{Z^{2.} \times p\,(1 - p)}{E^2}$$

Here,

n is the required sample size.

Z is the Z-score corresponding to the desired level of confidence (e.g., 95% confidence corresponds to a Z-score of approximately 1.96).

p is the estimated prevalence or incidence rate of the condition of the study (expressed as a proportion between 0 and 1).

E is the desired margin of error, 0.05

Rahman et al. (2022) reported that low back pain affects 18.5% of adults in Bangladesh. With an estimated prevalence rate of 0.185, the sample size calculation is –

$$n = \frac{(1.96)^2 \times 0.0185\ (1 - 0.185)}{(0.05)^2}$$

$$= 232$$

The calculated sample size for this study was 232 low back pain patients. However, due to feasibility and time constraints, data collection was limited. The sample was selected based on availability, and the final sample included participants who were conveniently accessible within the time and resource limitations of the study.

3.7 Inclusion Criteria:

1. Adults aged 18 years and older
2. Diagnosed with low back pain (acute or chronic) by a healthcare provider (Hoy et al., 2012)
3. Seeking treatment or consultation at the selected healthcare facilities during the study period (Dionne et al., 2008)
4. Willing and able to provide informed consent (World Medical Association, 2013)
5. Able to understand and respond to the questionnaire (e.g., sufficient cognitive function and language proficiency) (Dionne et al., 2008)

3.8 Exclusion Criteria:

1. Patients with non–low back pain–related musculoskeletal disorders (e.g., neck or shoulder pain) (Dionne et al., 2008)
2. Pregnant women or individuals with pregnancy-related low back pain (Wang et al., 2004)
3. Individuals with serious medical conditions or recent surgeries that affect their ability to participate (e.g., severe neurological disorders or spinal surgery in the last 6 months) (Hoy et al., 2012)
4. Patients with cognitive impairments or communication barriers that would prevent understanding or completing the questionnaire (Dionne et al., 2008)
5. Individuals currently receiving medical treatment for other major health conditions that might confound the results (e.g., cancer or major infections) (Hoy et al., 2012)

3.9 Data management and analysis

After completing the initial data collection, every questionnaire was checked again to find out any mistakes or unclear information. The data was analyzed through Statistical Package of Social Science (SPSS) version 20 and data was leveled in a Microsoft Excel worksheet and arranged in results. The data was analyzed through statistical tests to fulfill research objectives.

Statistical Analysis

The collected data were systematically organized, coded, and entered into a statistical software program for analysis. The statistical analysis comprised both descriptive and inferential components to ensure a comprehensive understanding of the dataset.

Initially, descriptive statistics were applied to summarize the basic features of the study population. For categorical variables, such as gender, occupation, educational level, or the presence or absence of specific symptoms, frequencies and percentages were calculated to present the distribution of responses clearly. For continuous variables—like age and scores—measures such as mean and standard deviations were computed to describe the central tendency and variability of the data.

To explore potential associations between variables, inferential statistics were employed. Given the nature of the data and the objectives of the study, the Chi-square test (χ^2 test) was selected as the primary statistical test for evaluating relationships between categorical variables. This non-parametric test is widely used in cross-sectional studies because it allows researchers to assess whether distributions of categorical variables differ from one another in a statistically significant way.

The Chi-square test of independence was applied specifically to examine whether a statistically significant association existed between two categorical variables. For example, it was used to assess whether demographic factors such as gender, marital status, or educational level were associated with an outcome variable such as awareness of a disease, compliance with treatment, or presence of a particular symptom. Each analysis involved comparing the observed frequencies of variable combinations in a contingency table against the frequencies that would be expected if there were no association between the variables.

The p-value obtained from the Chi-square test was used to determine statistical significance. A p-value less than 0.05 ($p < 0.05$) was considered to indicate a statistically significant association between the variables under investigation, suggesting that the observed relationship was unlikely to have occurred by chance alone.

These statistics help interpret how strong the relationship is between two categorical variables, beyond simply establishing whether it is statistically significant. This approach allowed the study to investigate patterns, trends, and associations in the data, offering insights into how various demographic, clinical, or behavioral factors were related within the context of the cross-sectional design. The Chi-square test, therefore, played a crucial role in supporting the study's objective of identifying relevant associations that could inform future research or intervention strategies.

All statistical analyses were double-checked to ensure accuracy and reliability. Results were presented in tables and graphs where appropriate, and interpretation of the findings was grounded in both statistical outcomes and clinical or contextual relevance.

3.10 Informed Consent

All participants provided their written consent. The participants verbally received an explanation of the consent form. The researcher gave the participants an explanation of how they may participate in this study. Every participant signed a written consent form provided to the researcher. As a result, the participant confirmed that they were able to understand the permission form and that their participation was voluntary. The confidentiality of the participant's data was made very obvious to them. The researcher gave the subjects his word that the study wouldn't hurt them. The study may not have directly benefited the participants, but it may have done so in the future for cases similar to theirs, it was revealed. Participants are free to revoke their permission at any time. To maintain privacy, data from this study were coded anonymously. The study wouldn't make them feel awful.

3.11 Ethical consideration

A research proposal was submitted to the physiotherapy department of Bangladesh Health Profession Institute for approval and the proposal was approved by the faculty members. Prior to starting the data collection, approval from the relevant authorities was acquired to ensure the participants' safety. The head of the physiotherapy department gave his official consent for the data collection and patient file review. Within the allotted time, data gathering was initiated and finished. Information was kept secure at all times.

Chapter – IV Result

4.1: Age Distribution of Participants

A total of 120 participants were included in the study. The mean age of the participants was 35.65 years, with a standard deviation of ±11.60 years, indicating a moderate variation in age within the sample. The age range spanned from 20 to 62 years, suggesting a broad representation of adults across early adulthood to late middle age. This distribution provides a diverse demographic, which enhances the generalizability of findings across different age groups. Based on the data, the majority of individuals fall within the 30–39 years age category, making up 39.2% of the total population. This is followed closely by those aged 20–29 years, who represent 31.7%. Smaller proportions are seen in the older age groups, with 11.7% aged 50–59 years, 10% aged 40–49 years, and only 7.5% in the 60–69 years category. Overall, the data suggests a relatively young population, with over 70% of individuals falling below the age of 40.

Age in Category	Frequency	Percentage
20 – 29 years	38	31.7%
30 – 39 years	47	39.2%
40 – 49 years	12	10%
50 - 59 years	14	11.7%
60 - 69 years	9	7.5%

Table 1: Age distribution of participants

4.2: Gender Distribution of Participants

Of the 120 participants included in the study, 69 (57.5%) were male and 51 (42.5%) were female. This indicates a slight male predominance in the study sample. The gender distribution was fairly balanced, allowing for comparative analysis between male and female participants where applicable.

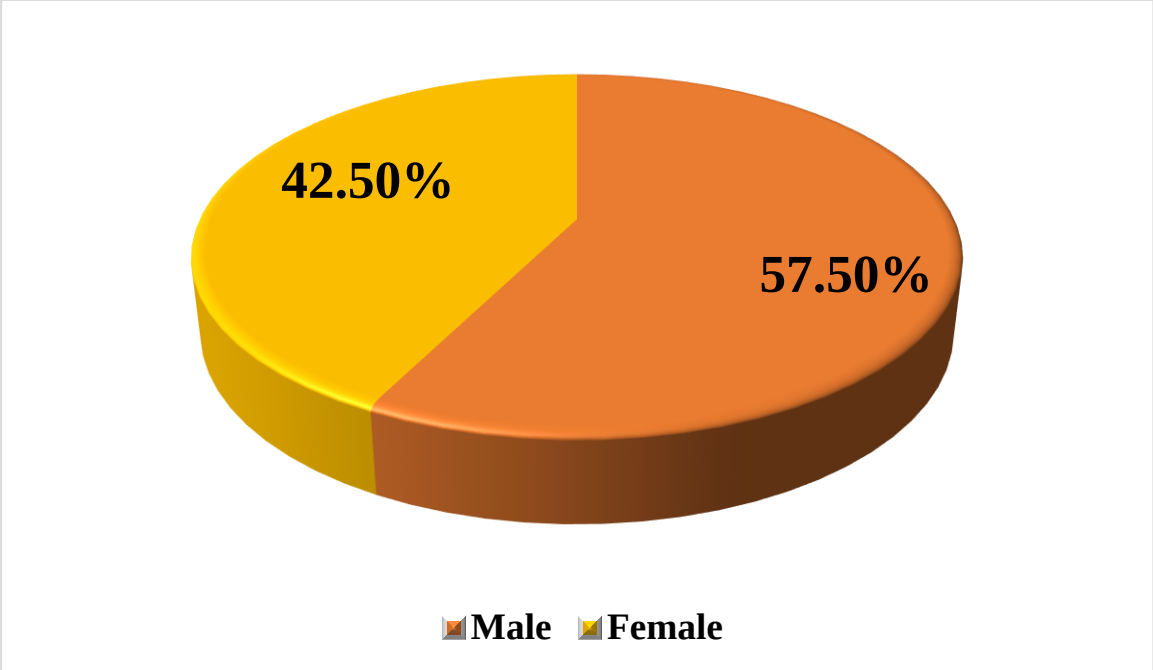


Figure 1: Pie chart showing the Gender Distribution of Participants

4.3: Marital Status Distribution

The marital status of the participants was assessed as part of the demographic profile. Among the total of 120 participants, 33 individuals (27.5%) reported being married, while the remaining 87 individuals (72.5%) were unmarried. This indicates that the majority of the study population consisted of unmarried individuals, suggesting a predominantly single demographic within the sample.

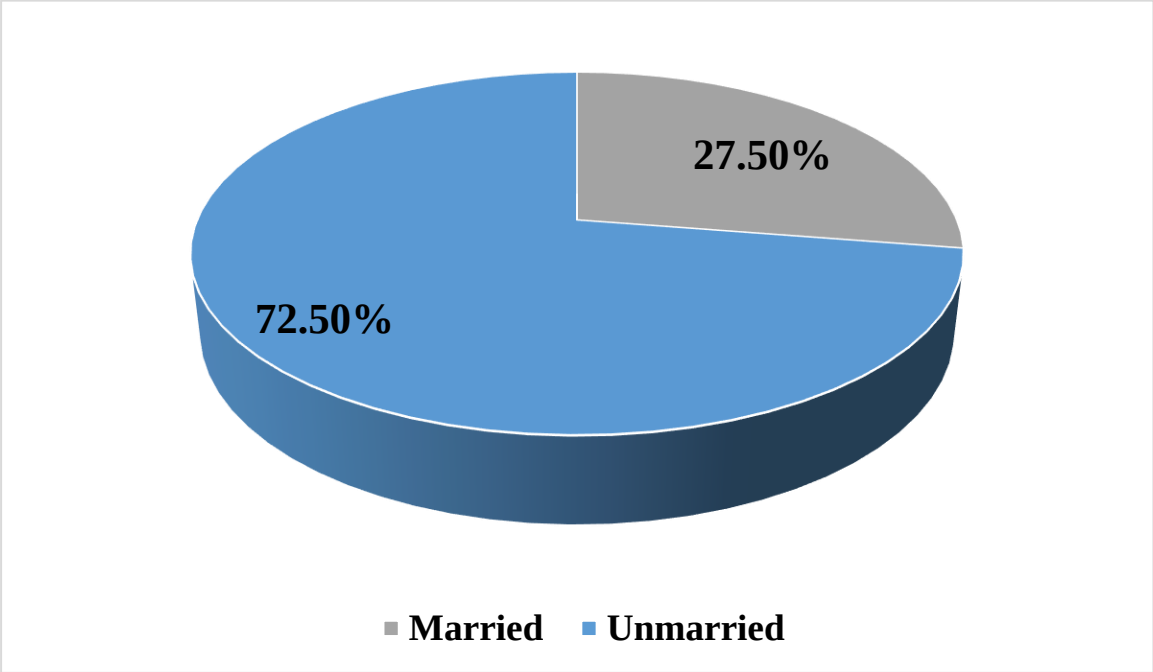


Figure 2: Pie chart showing marital status distribution

4.4: Living Area Distribution

Participants in the study were categorized based on their area of residence into urban, semi-urban, and rural settings. Out of 120 participants, the majority — 76 individuals (63.3%) — reported living in urban areas. Semi-urban residents comprised 29 participants (24.2%), while 15 participants (12.5%) were from rural areas. This distribution indicates that urban dwellers formed the largest portion of the study population, suggesting a potentially higher representation of individuals with greater access to healthcare, education, or urban infrastructure.

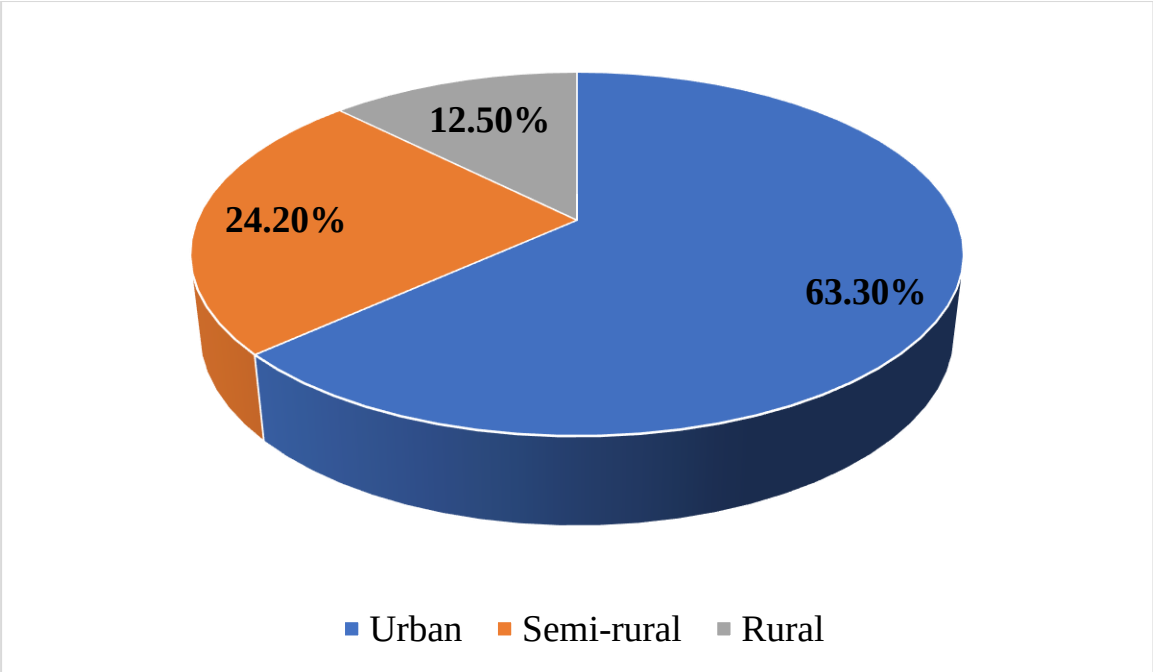


Figure 3: Pie chart showing living area distribution

4.5: Educational Background

The participants' level of education was categorized into six groups: no formal education, primary, secondary, higher secondary, graduate, and postgraduate. Among the 120 participants, none had no formal education, primary, or postgraduate qualifications. A total of 23 individuals (19.2%) had completed secondary education, 52 individuals (43.3%) had completed higher secondary education, and 45 individuals (37.5%) were graduates. This indicates that the majority of participants had education beyond the secondary level, with a substantial portion having attained graduate-level qualifications. The overall educational profile suggests a relatively well-educated sample population, which may influence awareness, attitudes, or access to health-related information and services.

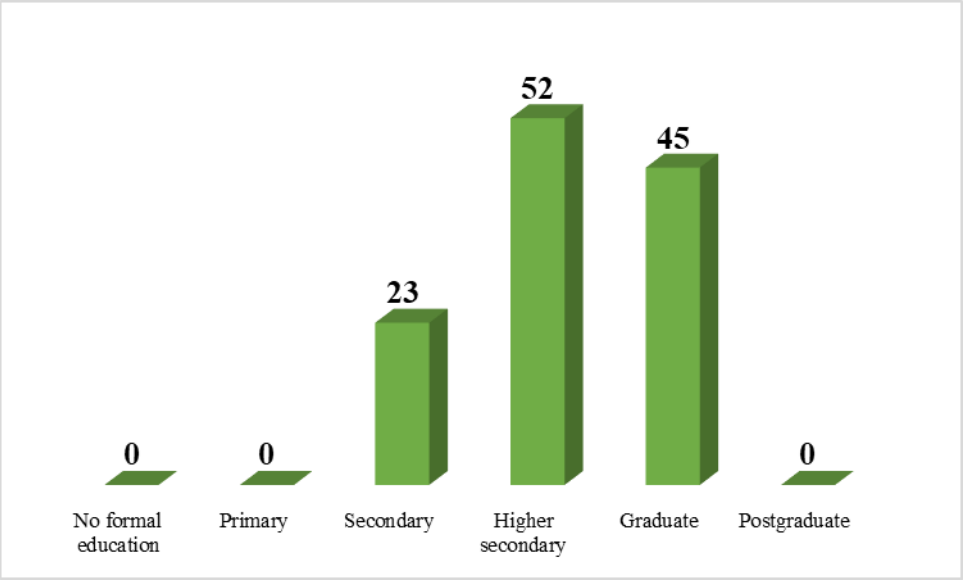


Figure 4: Clustered Column showing educational backgrounds of the participants

4.6: Occupational Distribution

Participants in the study represented a variety of occupational backgrounds. Among the 120 participants, 20 individuals (16.7%) were housewives, 8 (6.7%) worked as shopkeepers, and 39 (32.5%) were employed in service-related jobs. Additionally, 23 participants (19.2%) reported being involved in business, 5 (4.2%) worked as day laborers, and 25 individuals (20.8%) were students. This distribution shows that service holders constituted the largest occupational group, followed by students and businesspersons. The diversity of occupations reflects a broad socioeconomic representation within the sample.

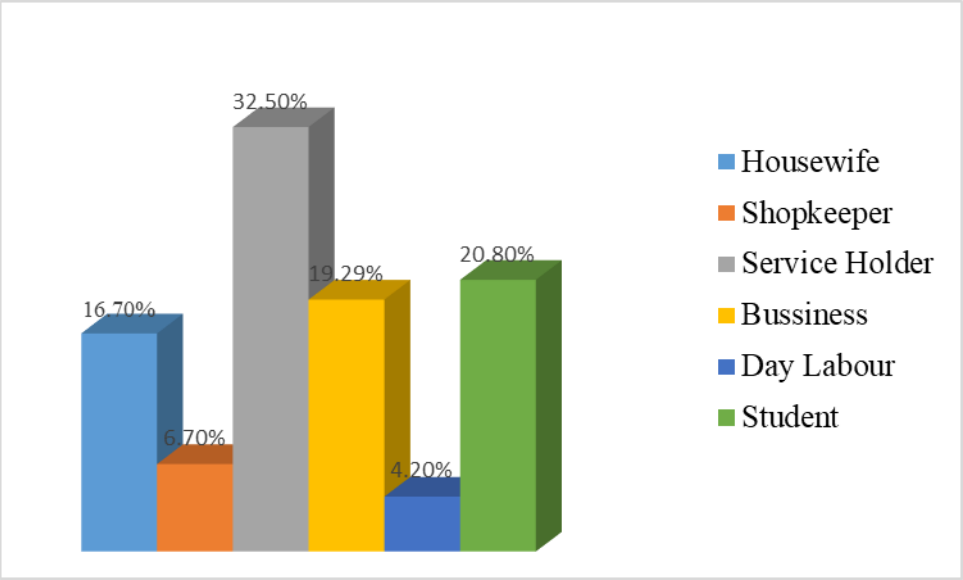


Figure 5: Clustered column showing occupational distribution

4.7: Distribution of scores on Low Back Knowledge Questionnaire

A total of 120 participants completed the Low Back Knowledge Questionnaire (LBKQ), which consists of 16 items with a maximum possible score of 24. The scores obtained by participants in the LBKQ demonstrated a moderate level of knowledge regarding low back care and associated issues.

The mean score among the participants was 9.11, median score was 10, with a standard deviation (SD) of ±3.53, indicating a moderate dispersion of scores around the mean. This suggests a varied understanding of low back knowledge across the sample population. The minimum score recorded was 2, while the maximum score was 15, illustrating a broad range in participants' knowledge levels.

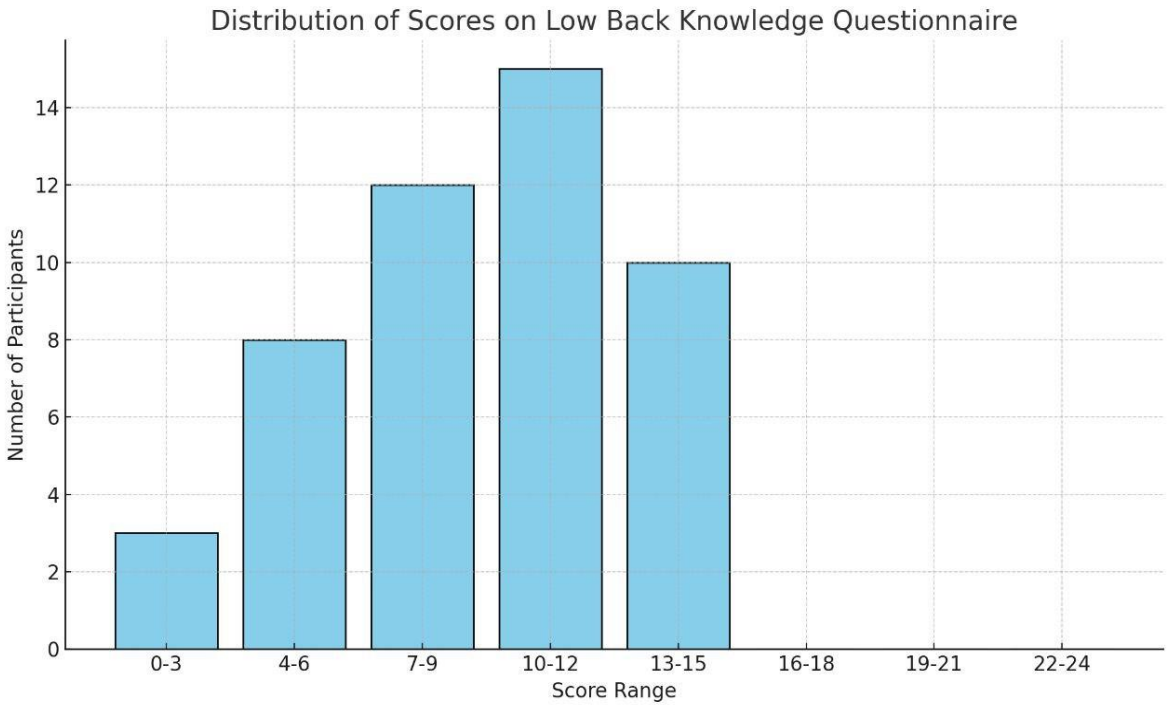


Figure 6: Bar chart on distribution of scores on Low Back Knowledge Questionnaire

4.8: Pain Frequency Among Participants

Out of 120 participants, the frequency of low back pain was reported as follows:

Constant pain was experienced by 30 participants (25.0%).

Daily pain was reported by the majority, with 80 participants (66.7%).

Occasional pain was noted by 10 participants (8.3%).

These findings indicate that a significant proportion of individuals experience low back pain on a daily basis, suggesting a persistent burden that could potentially interfere with daily activities, quality of life, and productivity. The high prevalence of daily and constant pain emphasizes the need for timely interventions and targeted management strategies in populations at risk.

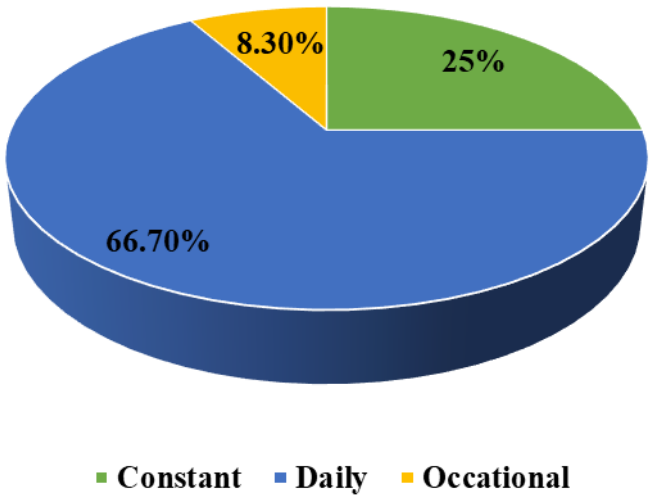


Figure 7: Pie chart of pain frequency

4.9: Lifestyle factor

Physical Activity Frequency Among Participants

Participants were asked how many days per week they engaged in physical activity. The responses indicated varied levels of activity across the sample:

A total of 40 participants (33.3%) reported engaging in no physical activity during the week. 20 participants (16.7%) reported being physically active on 1 to 2 days per week. The largest group, 41 participants (34.2%), engaged in physical activity on 3 to 4 days per week. Only 19 participants (15.8%) were physically active on 5 to 7 days per week.

These findings suggest that while a portion of the participants maintain a moderate level of physical activity, a significant number remain largely inactive. This lack of regular physical activity may contribute to the prevalence of low back pain and associated health risks, underscoring the need for health promotion initiatives to encourage more consistent physical engagement.

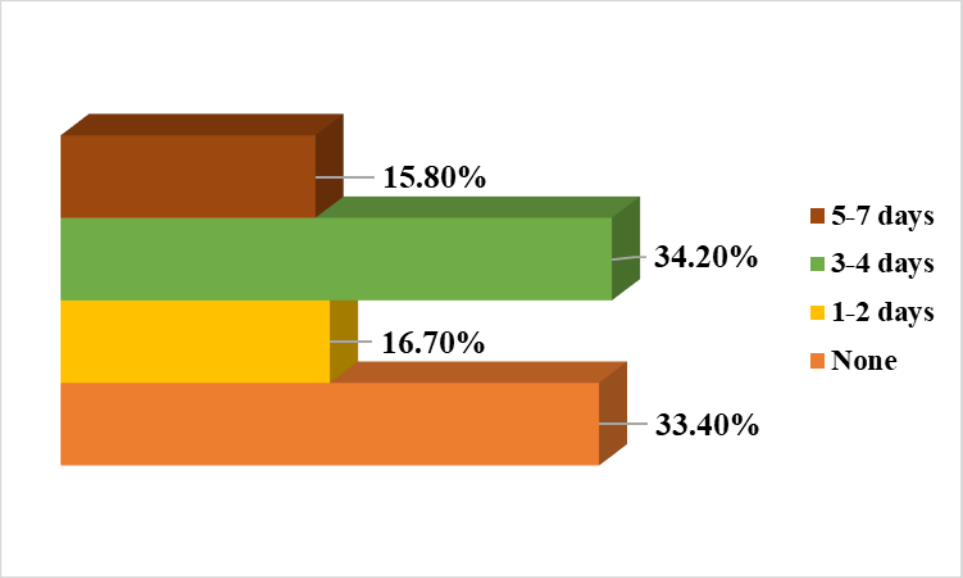


Figure 8: Bar chart of physical activity frequency among participants

Table 2: Lifestyle factors

Factors	Percentages	
Sitting hour duration	4-6 hours	40%
	More than 6 hours	60%
Smoking	Yes	41.7%
	No	58.3%
Diet	Balanced	74.2%
	Unbalanced	25.8%
Fruits and vegs	Yes	66.7%
	No	33.3%

Table 2 presents an overview of the lifestyle factors among the participants. The majority of individuals (60%) reported sitting for more than six hours per day, while 40% sat for four to six hours. Regarding smoking habits, 41.7% of the participants were smokers, whereas 58.3% did not smoke. In terms of dietary patterns, a significant proportion (74.2%) maintained a balanced diet, while 25.8% followed an unbalanced diet. Additionally, 66.7% of the participants reported consuming fruits and vegetables, whereas 33.3% did not include them in their regular diet. These findings provide insight into the general lifestyle behaviors that may influence the overall health status of the population studied.

4.10: Psychological factors

A total of 120 participants were surveyed regarding their experiences of stress and anxiety over the past month. When asked how often they had felt stressed or anxious during this period, 68 individuals (56.7%) reported experiencing such feelings occasionally. In contrast, 52 participants (43.3%) indicated that they frequently felt stressed or anxious. These findings suggest that a considerable proportion of the population experiences varying levels of psychological distress, with more than half reporting occasional stress and a significant minority experiencing frequent episodes. This highlights the prevalence of stress and anxiety among the participants and underscores the need for further attention to mental well-being in this group.

Participants were asked whether they believed that stress had an impact on their back pain. In response, 67 individuals (55.8%) acknowledged that stress contributed to or exacerbated their back pain, while 53 participants (44.2%) did not perceive any such connection. These responses indicate that over half of the participants recognized a link between psychological stress and their physical discomfort, particularly in relation to back pain. This finding supports the growing body of evidence suggesting a psychosomatic component in musculoskeletal conditions, highlighting the importance of addressing both mental and physical health in clinical assessments and interventions.

Table 3: Support from Family and Friends When Dealing with Stress

When asked whether they receive support from family and friends during stressful situations, the responses were almost evenly divided, though slightly in favor of those who do receive support.

Answer	Number of respondents	Percentage
Yes	67	55.8%
No	53	44.2%

A little over half of the participants indicated that they receive emotional and/or practical support from family members and friends when dealing with stress. This suggests a moderate level of social support within the population surveyed. Such support can play a crucial role in mental health by providing comfort, advice, and a sense of belonging during difficult times.

A significant portion of participants reported not receiving support from their family or friends when facing stress. This may indicate either strained personal relationships, lack of awareness about how to seek help, or cultural or individual tendencies to cope alone. This group could be at greater risk for prolonged stress and related complications, highlighting the need for targeted interventions such as counseling or peer support systems.

While the majority of respondents (55.8%) benefit from a support network, the relatively high percentage of individuals who do not (44.2%) points to a potential gap in social and emotional care. This emphasizes the importance of strengthening social support systems and encouraging open communication about stress and mental well-being.

Table 4: Job Satisfaction Among Participants

Job satisfaction is a key indicator of well-being, productivity, and overall mental health in any professional setting. The participants in this survey were asked to rate their level of satisfaction with their current job. The responses were distributed across four categories:

Answer	Number of respondents	Percentage
Very satisfied	30	25%
Satisfied	74	61.7%
Neutral	5	4.2%
Dissatisfied	11	9.2%

One-quarter of the participants reported being very satisfied with their jobs. This group likely experiences high levels of motivation, fulfillment, and alignment between their personal goals and job responsibilities. They are also more likely to have positive relationships with coworkers and management, and feel that their work is valued.The majority of participants indicated that they are satisfied with their jobs. While not expressing the highest level of satisfaction, this group generally finds their work environment acceptable and fulfilling, though there may still be areas for improvement. This high percentage suggests that most participants have a relatively positive view of their employment situation.

A small percentage of respondents reported a neutral stance, indicating neither satisfaction nor dissatisfaction. This could reflect indifference, lack of engagement, or transitional feelings, where the participant has yet to fully form an opinion about their job satisfaction.

A minority of the participants expressed dissatisfaction with their current job. This group may be experiencing challenges such as high workload, lack of support, limited career growth opportunities, or poor work-life balance. Their responses highlight areas that may require attention from employers or management.

Overall, the data shows a predominantly positive trend, with 86.7% of participants falling into either the "Satisfied" or "Very Satisfied" categories. However, the 9.2% of dissatisfied respondents and 4.2% with neutral feelings point to areas that could benefit

from interventions such as employee engagement initiatives, feedback mechanisms, or workplace improvements.

4.13: Workstation Setup and Ergonomics

An ergonomically sound workstation is vital for reducing physical strain, improving comfort, and preventing work-related musculoskeletal disorders (WMSDs). Participants in this study were surveyed on various aspects of their workstation setup and ergonomic practices. The results indicate significant shortcomings in ergonomic awareness and implementation.

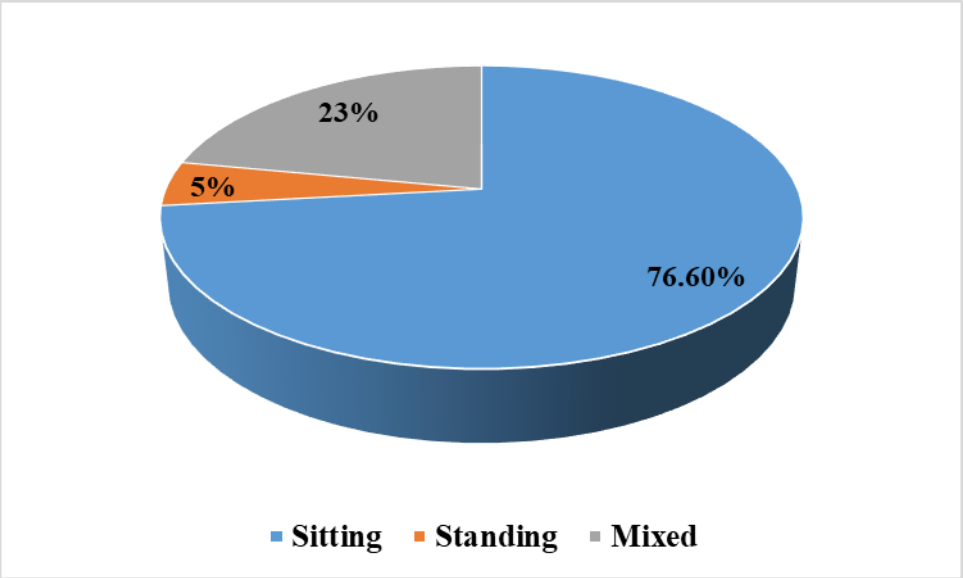


Figure 9: Primary posture at work

Participants were asked to identify their primary posture during work activities. The majority, comprising 76.7% of respondents, reported that they predominantly worked in a sitting position. A smaller portion, 5%, indicated that their work primarily involved standing. Meanwhile, 23% of participants reported a mixed posture, involving both sitting and standing during their workday. These findings suggest that a sedentary work posture is most common among the participants, which may have implications for musculoskeletal health, particularly concerning issues such as back pain and posture-related discomfort.

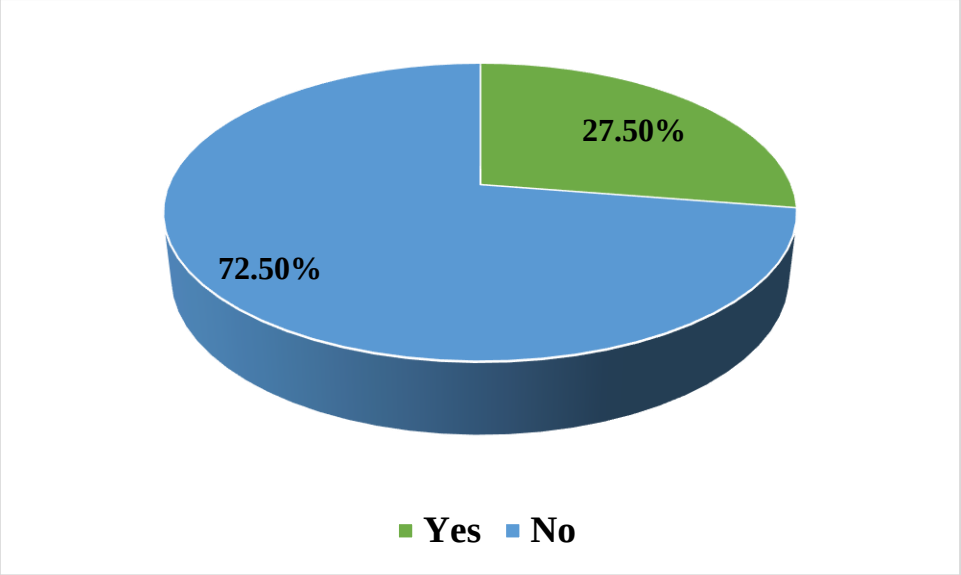


Figure 10: Lifting heavy objects

Participants were also asked whether their work involved lifting heavy objects. A minority of respondents (27.5%) confirmed that they engaged in lifting heavy loads as part of their occupational activities, while the majority (72.5%) reported that their work did not require such physical exertion. This indicates that most participants are not regularly exposed to the physical demands associated with heavy lifting, which may influence the type and severity of musculoskeletal issues experienced, particularly in relation to back health.

Table 5: **Workstation Setup and Ergonomics**

Ergonomically Designed Workstations	Yes – 4.2% No – 95.8%
Postural Adjustments During Work	Yes – 55.8% No – 44.2%
Use of Ergonomic Tools	Yes – 4.2% No – 95.8%

Only a very small percentage (4.2%) of participants reported that their workstation is ergonomically designed. This means that the vast majority (95.8%) are working in environments that may not support proper posture, physical comfort, or long-term health. An absence of ergonomic setup can lead to discomfort, repetitive strain injuries, and reduced productivity over time.

Over half of the respondents (55.8%) stated that they adjust their sitting posture frequently during work. This indicates some awareness of posture management, which is a positive finding. However, a substantial portion (44.2%) do not make regular adjustments, potentially due to long sitting hours, poor ergonomic knowledge, or static work demands. Frequent postural changes are essential for reducing fatigue and preventing musculoskeletal strain.

Only 4.2% of participants reported using ergonomic tools (such as ergonomic chairs, keyboards, or footrests). This mirrors the low percentage of ergonomically designed workstations and highlights a critical lack of access to or knowledge of ergonomic resources. The overwhelming 95.8% not using such tools suggests a strong need for ergonomic education and workplace interventions.

The findings reveal a concerning trend: although over half of the participants are making conscious efforts to adjust their posture, very few have access to ergonomically designed workstations or tools. This imbalance suggests that while there may be individual awareness of the importance of posture, institutional or organizational support for ergonomic practices is lacking. The results underscore the need for targeted ergonomic training, investment in proper workplace furniture and tools, and the implementation of policies that promote physical well-being at work.

Table 6: Association between frequency of pain and occupation

Associating factors	Test name	P value
Frequency of Pain and Occupation	Chi-square test	.000

The SPSS chi-square test output presented here analyzes the association between frequency of pain (categorized as Constantly, Daily, and Occasionally) and occupation (Housewife, Shopkeeper, Service Holder, Business, Day Laborer, and Student) using a sample of 120 valid cases. According to the cross-tabulation, most service holders (29 out of 39) and businesspeople (18 out of 23) report experiencing daily pain. Students show a broader distribution, with 11 reporting constant pain and 9 daily pain. The chi-square test results show a Pearson Chi-Square value of 45.301 with 10 degrees of freedom (df) and a p-value of .000 (Asymp. Sig. 2-sided). **Since the p-value is less than 0.05, the result is statistically significant, indicating a meaningful association between occupation and frequency of pain**. This suggests that the type of occupation a person holds is likely related to how frequently they experience pain.

Table 7: Association between the Frequency of pain and Daily hours spent sitting or standing at work

Associating factors	Test name	P value
Frequency of pain and Daily hours spent sitting or standing at work	Chi-square test	.000

The table presents the results of a chi-square test analyzing the relationship between pain frequency and hours spent sitting or standing. The pain frequency variable has three categories: "Constantly," "Daily," and "Occasionally," while the hours spent sitting or standing range from 3 to 12 hours. The contingency table reveals how pain frequency is distributed across different durations of sitting or standing. For example, 10 people who reported constant pain sat or stood for 8 hours, while 29 people with daily pain sat or stood for 5 hours. Only 5 individuals with occasional pain were observed in the 7- and 8-hour categories.

The chi-square test results indicate a statistically significant association between pain frequency and sitting/standing hours. The Pearson chi-square value is 142.867 with 18 degrees of freedom, and the p-value is less than 0.001, meaning the relationship is highly significant.

Table 8: Association between the Frequency of pain and gender

Associating factors	Test name	P value
Frequency of pain and Gender	Chi-square test	.008

The table displays a chi-square test examining the relationship between gender (Male/Female) and pain frequency (Constantly, Daily, Occasionally) in a sample of 120 participants. The contingency table shows the distribution of pain frequency across genders: 19 males and 11 females reported constant pain, while 40 individuals of each gender experienced daily pain. Notably, no females reported occasional pain, whereas 10 males did.

The chi-square test results reveal a statistically significant association between gender and pain frequency. The Pearson chi-square value is 9.650 with 2 degrees of freedom, yielding a p-value of 0.008, which is significant at the 0.05 level. The likelihood ratio test (13.312, p = 0.001) further supports this finding

Chapter V Discussion

This study offers a detailed analysis of demographic characteristics, lifestyle factors, and health-related behaviors in relation to low back pain (LBP) among 120 adult participants. The findings shed light on the prevalence of LBP and its associations with age, gender, occupation, physical activity, smoking, social support, and ergonomic practices, with implications for health promotion and future interventions.

The mean participant age was 35.65 years (SD = 11.60), with a range from 20 to 62 years, providing a wide demographic profile. This age spread strengthens the study's generalizability, encompassing various life stages that may present differing risk profiles for musculoskeletal disorders. The slight male predominance (57.5%) aligns with previous occupational studies where male participants are often overrepresented in workplace settings (Andersson, 1999). However, LBP is frequently reported to be more prevalent and severe among women, potentially due to hormonal fluctuations and anatomical differences (Fillingim et al., 2009). Future studies should address this gender disparity to better understand sex-specific patterns.

A majority of participants were unmarried (72.5%), potentially indicative of a younger demographic or cultural trends toward delayed marriage. Marital status may influence LBP through psychosocial stressors, with unmarried individuals often experiencing greater financial and emotional strain (Hoy et al., 2010). The urban predominance (63.3%) suggests that participants may have greater access to healthcare and ergonomic resources, though urban lifestyles are also linked to sedentary behavior, a known LBP risk factor (Chen et al., 2017). Conversely, the underrepresentation of rural populations (12.5%) limits the findings' applicability to agricultural workers, who often face physically demanding tasks and limited healthcare access (Dutmer et al., 2019).

Educational levels among participants were relatively high, with 43.3% having completed higher secondary and 37.5% holding undergraduate degrees. While higher education is generally associated with improved health literacy, it does not necessarily translate to awareness or implementation of ergonomic practices, as shown by the 95.8% lacking ergonomic workstations. The occupational distribution was diverse—32.5% were service workers, 20.8% students, and 19.2% business professionals. These roles are commonly associated with prolonged sitting and static postures, both

recognized contributors to LBP (Lis et al., 2007). The low proportion of manual laborers (4.2%) may underestimate the risks faced by this high-burden group.

Knowledge about LBP, assessed using the Low Back Knowledge Questionnaire (LBKQ), yielded a mean score of 9.11 out of 24 (SD = 3.53), indicating moderate knowledge deficits. Poor understanding of LBP has been associated with inadequate self-care and increased disability (Buchbinder et al., 2013). The broad score range (2–15) highlights variability in awareness, reinforcing the need for structured public health education tailored to different literacy levels.

The prevalence of LBP was notably high: 66.7% experienced daily pain, and 25% reported constant pain. These findings reflect the global burden of chronic LBP as a leading cause of disability (GBD 2017 Disease and Injury Incidence and Prevalence Collaborators, 2018). The chronic nature of LBP in this population is likely multifactorial, involving physical inactivity, poor ergonomics, and psychosocial influences (Hartvigsen et al., 2018).

Physical inactivity was widespread, with 33.3% of participants reporting no weekly exercise and only 15.8% meeting recommendations for near-daily physical activity. Sedentary lifestyles weaken core muscles, reduce spinal stability, and increase the risk of LBP (Shiri et al., 2018).

Encouraging routine physical activity, even though simple interventions like workplace stretching or walking programs, could offer substantial benefits.

High smoking rates (41.7%) were observed, supporting literature that identifies smoking as a risk factor for LBP through vascular compromise and inflammatory mechanisms (Goldberg et al., 2011). Smoking cessation programs should be considered an integral component of LBP management strategies. Social support was received by 55.8% of respondents, while 44.2% lacked it. This is concerning, as inadequate social support can worsen pain perception and hinder coping mechanisms (Linton, 2000). Psychological and social factors should be considered in LBP treatment planning.

Job satisfaction was high overall, with 86.7% expressing satisfaction, yet 9.2% reported dissatisfaction. Dissatisfaction has been linked to increased musculoskeletal complaints, often due to stress and adverse ergonomic conditions (Lang et al., 2012).

Addressing job satisfaction through wellness programs and supportive work environments could mitigate stress-related LBP.

Ergonomic awareness and implementation were critically low. A staggering 95.8% reported working in non-ergonomic conditions, with only 4.2% using ergonomic tools. Poor workstation setup, especially among those in sedentary jobs, contributes directly to musculoskeletal strain (Punnett & Wegman, 2004). Although 55.8% of participants attempted to adjust their posture, such behavioral changes alone are insufficient. Structural modifications, such as adjustable chairs and standing desks, are essential to reduce biomechanical stress.

This study emphasizes the interplay of knowledge gaps, high pain prevalence, and poor ergonomic practices in the burden of LBP. The findings support the need for integrated, multidisciplinary strategies, including targeted education, lifestyle interventions, ergonomic training, and workplace policy changes. Educational initiatives should be designed not only to increase awareness but also to promote behavior change in diverse occupational groups.

Future research should include a broader occupational and geographic sample to capture underrepresented groups, such as manual laborers and rural workers. Additionally, longitudinal studies and interventional trials are necessary to establish causal pathways and evaluate the effectiveness of proposed solutions. A more holistic approach—addressing both physical and psychosocial determinants of LBP—is essential to reduce its widespread impact.

5.2 Limitations

Despite offering valuable insights, this study has several limitations that must be acknowledged. First, its cross-sectional design restricts the ability to draw causal inferences between risk factors and LBP. Temporal relationships cannot be determined, limiting interpretation regarding the directionality of associations.

Second, self-reported data were used to assess physical activity, smoking habits, social support, job satisfaction, and ergonomic practices. Such data are subject to recall bias and social desirability bias, which may have influenced participant responses. Objective measures (e.g., activity trackers, ergonomic assessments) would enhance accuracy in future studies.

Third, the sample was drawn from specific healthcare settings in urban areas, potentially introducing selection bias. The underrepresentation of rural populations and manual laborers limits the generalizability of the findings to the broader population, particularly to those with different occupational and environmental exposures.

Fourth, while the LBKQ was used to assess knowledge, its cultural and contextual validity in the study population was not formally evaluated. Misinterpretation of questions or cultural differences in understanding pain-related concepts may have influenced results.

Lastly, the relatively small sample size (n = 120) limits the statistical power to detect subtle associations or subgroup differences. Larger studies with stratified sampling across diverse regions and occupations are warranted to validate and extend these findings.

Chapter VI Conclusion & Recommendations

Conclusion:

The study provides valuable insights into the demographic, lifestyle, and occupational factors associated with low back pain (LBP) among 120 participants. Key findings reveal a high prevalence of daily (66.7%) and constant (25%) LBP, moderate knowledge gaps regarding back care (mean LBKQ score = 9.11/24), and significant risk factors such as physical inactivity (33.3% reported no weekly exercise), smoking (41.7%), and poor workstation ergonomics (95.8% lacked ergonomic setups). The demographic distribution indicates a predominantly urban (63.3%), educated (80.8% beyond secondary education), and employed (service workers = 32.5%, students = 20.8%) sample, which may limit generalizability but highlights workplace-related LBP risks.

Psychosocial factors, including limited social support (44.2%) and job dissatisfaction (9.2%), further underscore the multifactorial nature of LBP. While most participants (86.7%) reported job satisfaction, the lack of ergonomic awareness and tools suggests that workplace environments remain a critical area for intervention. The study aligns with existing literature linking sedentary behavior, poor posture, and stress to chronic LBP, reinforcing the need for holistic management strategies.

However, limitations such as sampling bias (underrepresentation of rural and manual labor populations), self-reporting inaccuracies, and the cross-sectional design (inability to establish causality) must be acknowledged. Despite these constraints, the findings emphasize the urgent need for targeted interventions to address LBP through education, ergonomic improvements, and lifestyle modifications.

Recommendations:

1. Public Health and Educational Interventions

- Awareness Campaigns: Develop community-based programs to improve knowledge of LBP prevention, proper posture, and self-management techniques. Workshops in workplaces, schools, and healthcare settings could bridge the gap identified in the LBKQ scores.

- Smoking Cessation Programs: Given the high smoking rate (41.7%), integrating LBP education with anti-smoking initiatives may reduce inflammation-related pain aggravation.

- Promotion of Physical Activity: Public health campaigns should encourage regular exercise, particularly targeting inactive individuals (33.3%). Low-cost interventions like workplace stretching routines or walking challenges could be effective.

2. Workplace Ergonomics and Policy Changes

- Ergonomic Assessments: Employers should conduct mandatory ergonomic evaluations for employees, especially in sedentary jobs (e.g., service workers, students). Subsidies or tax incentives for ergonomic equipment (e.g., adjustable chairs, standing desks) could improve compliance.

- Training Programs: Regular workshops on posture correction, micro-breaks, and safe lifting techniques should be institutionalized. The finding that only 4.2% used ergonomic tools highlights a critical gap in awareness.

- Mental Health and Social Support: Since 44.2% lacked social support, workplaces could introduce peer support groups or counseling services to address stress-related LBP contributors.

3. Healthcare System Enhancements

- Multidisciplinary Pain Clinics: Integrate physiotherapists, occupational therapists, and psychologists into LBP management to address both physical and psychosocial factors.

- Early Intervention Protocols: Primary care providers should screen for LBP risk factors (e.g., inactivity, poor ergonomics) during routine check-ups to prevent chronicity.

4. Future Research Directions

- Diverse Population Studies: Include more rural, elderly, and manual labor participants to improve generalizability.

- Interventional Trials: Test the efficacy of workplace ergonomic programs or digital health tools (e.g., posture-tracking apps) in reducing LBP prevalence.

The study underscores LBP as a pervasive issue influenced by modifiable risks. By combining public health initiatives, workplace reforms, and healthcare strategies, stakeholders can mitigate the burden of LBP. Prioritizing ergonomic education, physical activity promotion, and psychosocial support will be essential in fostering long-term musculoskeletal health.

References

Alghwiri, A.A., Al-Sayegh, N. & Whitney, S.L., (2022), 'Low back pain knowledge among patients in Jordan: A cross-sectional study' *Journal of Back and Musculoskeletal Rehabilitation*, 35(2), pp. 321-328.

Al-Muqayadat, N., Al-Husban, N. & Al-Husban, Y., (2021), 'Prevalence and risk factors of low back pain among Palestinian nurses: A cross-sectional study' *Journal of Occupational Health*, 63(1), p. e12245.

Alshami, A.M., Alzahrani, M.M. & Alotaibi, M.S., (2021), 'The association between educational level and low back pain knowledge in Saudi Arabia' *BMC Musculoskeletal Disorders*, 22(1), p. 567.

Baker, P., Reading, I., Cooper, C., & Coggon, D. (2005), 'Knee disorders in the general population and their relation to occupation', *Occupational and Environmental Medicine*, 60(10), pp. 794–797.

Bunzli, S., Smith, A., Schütze, R. & O'Sullivan, P., (2017), 'Beliefs underlying pain-related fear and how they evolve: A qualitative investigation in people with chronic back pain', *Pain Medicine*, 18(7), pp. 1245-1253.

Chou, R., Qaseem, A., Snow, V., Casey, D., Cross, J.T., Shekelle, P. & Owens, D.K. (2007), 'Diagnosis and treatment of low back pain: a joint clinical practice guideline from the American College of Physicians and the American Pain Society', *Annals of Internal Medicine*, 147(7), pp. 478–491.

clinical management, and outcomes of patients with low back pain: A systematic review', *European Journal of Pain*, 18(1), pp. 3-17.

Da Costa, B.R. & Vieira, E.R., (2010), 'Risk factors for work-related musculoskeletal disorders: A systematic review of recent longitudinal studies', *American Journal of Industrial Medicine*, 53(3), pp. 285-323.

Dagenais, S., Caro, J. & Haldeman, S. (2008), 'A systematic review of low back pain cost of illness studies in the United States and internationally', *The Spine Journal*, 8(1), pp. 8–20.

Darlow, B., Fullen, B.M., Dean, S., Hurley, D.A., Baxter, G.D. & Dowell, A., (2014), 'The association between health care professional attitudes and beliefs and the attitudes and beliefs,

Dewalt, D.A., Berkman, N.D., Sheridan, S., Lohr, K.N. & Pignone, M.P. (2014), 'Literacy and health outcomes: a systematic review of the literature', *Journal of General Internal Medicine*, 19(12), pp. 1228–1239.

Dionne, C.E., Dunn, K.M. & Croft, P.R., (2011), 'Does back pain prevalence really decrease with increasing age? A systematic review', *Age and Ageing*, 40(2), pp. 156-163.

Dionne, C.E., Dunn, K.M., Croft, P.R., Nachemson, A.L., Buchbinder, R., Walker, B.F., Wyatt, M., Rossignol, M., Leboeuf-Yde, C. & Hartvigsen, J., (2008), 'A consensus approach toward the standardization of back pain definitions for use in prevalence studies', *Spine*, 33(1), pp.95-103.

Dutta, N., Koepp, G.A., Stovitz, S.D., Levine, J.A. & Pereira, M.A. (2018), 'Using sit-stand workstations to decrease sedentary time in office workers: a randomized crossover trial', *International Journal of Environmental Research and Public Health*, 11(7), pp. 6653–6665.

Foster, N.E., Anema, J.R., Cherkin, D., Chou, R., Cohen, S.P., Gross, D.P., Ferreira, P.H., Fritz, J.M., Koes, B.W., Peul, W. & Turner, J.A., (2018), 'Prevention and treatment of low back pain: Evidence, challenges, and promising directions', *The Lancet*, 391(10137), pp. 2368-2383.

Fritz, J.M., Magel, J.S., McFadden, M., Asche, C., Thackeray, A., Meier, W. & Brennan, G.P., (2021), 'Early physical therapy vs usual care for patients with low back pain: A randomized clinical trial', *JAMA*, 325(8), pp. 734-745.

Global Burden of Disease Study, (2020), 'Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017', *The Lancet*, 392(10159), pp. 1789-1858.

Hartvigsen, J., Hancock, M.J., Kongsted, A., Louw, Q., Ferreira, M.L., Genevay, S., Hoy, D., Karppinen, J., Pransky, G., Sieper, J., Smeets, R.J. & Underwood, M.

(2018), ‘What low back pain is and why we need to pay attention’, *The Lancet*, 391(10137), pp. 2356–2367.

Hartvigsen, J., Hancock, M.J., Kongsted, A., Louw, Q., Ferreira, M.L., Genevay, S., Hoy, D., Karppinen, J., Pransky, G., Sieper, J. & Smeets, R.J., (2018), ‘What low back pain is and why we need to pay attention’, *The Lancet*, 391(10137), pp. 2356-2367.

Hestbaek, L., Leboeuf-Yde, C. & Manniche, C. (2003), ‘Low back pain: what is the long-term course? A review of studies of general patient populations’, *European Spine Journal*, 12(2), pp. 149–165.

Hoy, D., Bain, C., Williams, G., March, L., Brooks, P., Blyth, F., Woolf, A., Vos, T. & Buchbinder, R. (2014), ‘A systematic review of the global prevalence of low back pain’, *Arthritis & Rheumatism*, 64(6), pp. 2028–2037.

Hoy, D., Bain, C., Williams, G., March, L., Brooks, P., Blyth, F., Woolf, A., Vos, T. & Buchbinder, R., (2012), ‘A systematic review of the global prevalence of low back pain’, *Arthritis & Rheumatism*, 64(6), pp.2028-2037.

Hu, J., Jiang, Y., Liang, Y., Yu, I.T. & Leng, H., (2022), ‘Risk factors for low back pain among Chinese occupational populations: A systematic review and meta-analysis’, *BMC Public Health*, 22(1), p. 1234.

Janz, N.K. & Becker, M.H. (1984), ‘The Health Belief Model: a decade later’, *Health Education Quarterly*, 11(1), pp. 1–47.

Kamper, S.J., Apeldoorn, A.T., Chiarotto, A., Smeets, R.J., Ostelo, R.W., Guzman, J. & van Tulder, M.W., (2015), ‘Multidisciplinary biopsychosocial rehabilitation for chronic low back pain: Cochrane systematic review and meta-analysis’, *BMJ*, 350, p. h444.

Korean National Health and Nutrition Examination Survey, (2021), ‘Prevalence and risk factors of chronic low back pain in South Korea: A population-based study’, *Journal of Korean Medical Science*, 36(25), p. e172.

Lin, I., Wiles, L., Waller, R., Goucke, R., Nagree, Y., Gibberd, M., Straker, L., Maher, C.G. & O’Sullivan, P.P., (2021), ‘What does best practice care for musculoskeletal pain look like? Eleven consistent recommendations from high-

quality clinical practice guidelines: Systematic review', *British Journal of Sports Medicine*, 55(2), pp. 79-86.

Luque-Suarez, A., Martinez-Calderon, J. & Falla, D., (2019), 'Role of kinesiophobia on pain, disability and quality of life in people suffering from chronic musculoskeletal pain: A systematic review', *British Journal of Sports Medicine*, 53(9), pp. 554-559.

Maher, C., Underwood, M. & Buchbinder, R. (2017), 'Non-specific low back pain', *The Lancet*, 389(10070), pp. 736–747.

Maher, C., Underwood, M. & Buchbinder, R., (2017), 'Non-specific low back pain', *The Lancet*, 389(10070), pp. 736-747.

Marras, W.S., Cutlip, R.G., Burt, S.E. & Waters, T.R. (2010), 'National occupational research agenda (NORA) future directions in occupational musculoskeletal disorder health research', *Applied Ergonomics*, 40(1), pp. 15–22.

Moseley, G.L., (2004), 'Evidence for a direct relationship between cognitive and physical change during an education intervention in people with chronic low back pain.', **European Journal of Pain*, 8(1), pp. 39-45.

Nordander, C., Ohlsson, K., Balogh, I., Hansson, G.Å., Axmon, A., Persson, R. & Skerfving, S., (2020), 'Gender differences in workers with identical repetitive industrial tasks: Exposure and musculoskeletal disorders', *International Archives of Occupational and Environmental Health*, 93(1), pp. 95-110.

O'Sullivan, P., Caneiro, J.P., O'Keeffe, M., Smith, A., Dankaerts, W., Fersum, K. & O'Sullivan, K., (2016), 'Cognitive functional therapy: An integrated behavioral approach for the targeted management of disabling low back pain', *Physical Therapy*, 96(12), pp. 1818-1828.

Ojoawo, A.O., Olaogun, M.O. & Hassan, M.A., (2020), 'Comparative effectiveness of two stabilization exercise positions on pain and functional disability of patients with low back pain', *Journal of Back and Musculoskeletal Rehabilitation*, 33(1), pp. 23-29.

Park, S.M., Kim, H.J., Jang, S., Kim, H., Chang, B.S., Lee, C.K. & Yeom, J.S., (2020), 'Prevalence of chronic low back pain and its associated factors in the general

population of South Korea: A cross-sectional study using the National Health and Nutrition Examination Surveys', *Journal of Korean Medical Science*, 35(35), p. e308.

Pereira, L.M., Obara, K., Dias, J.M., Menacho, M.O., Guariglia, D.A., Schiavoni, D., Pereira, H.M. & Cardoso, J.R.,(2023), 'Comparing the effectiveness of digital versus conventional education for patients with chronic low back pain: A randomized controlled trial', *Journal of Medical Internet Research*, 25(1), p. e34567.

Pincus, T., Burton, A.K., Vogel, S. & Field, A.P., (2002), 'A systematic review of psychological factors as predictors of chronicity/disability in prospective cohorts of low back pain', *Spine*, 27(5), pp. E109-E120.

Rahman, M., Uddin, M.K., Rahman, M.T. & Hossain, M.M., (2021), 'Prevalence and risk factors of low back pain among nurses in Bangladesh: A systematic review and meta-analysis', *BMC Nursing*, 20(1), p. 87.

Rosenstock, I.M. (1974), 'Historical origins of the Health Belief Model', *Health Education Monographs*, 2(4), pp. 328–335.

Saragiotto, B.T., Maher, C.G., Yamato, T.P., Costa, L.O., Menezes Costa, L.C., Ostelo, R.W. & Macedo, L.G., (2016), 'Motor control exercise for chronic non-specific low back pain: A Cochrane review', *Spine*, 41(16), pp. 1284-1295.

Shariat, A., Tamrin, S.B., Arumugam, M. & Danaee, M., (2020), 'Prevalence of low back pain among nurses and its association with work-related factors', *Work*, 65(2), pp. 373-381.

Slater, H., Briggs, A.M., Watkins, K. & Chua, J. (2019), 'Health literacy and self-management in people with chronic low back pain', **Musculoskeletal Science and Practice*, 39, pp. 141–147.

Slater, H., Briggs, A.M., Watkins, K. & Chua, J., (2012), 'Educating patients with persistent pain about 'how nerves work' in a 10-minute consultation: Evaluation of a new patient education tool', *Pain Medicine*, 13(9), pp. 1184-1196.

Tait, R.C., Chibnall, J.T. & Kalauokalani, D. (2016), 'Provider judgments of patients in pain: seeking symptom certainty', *Pain Medicine*, 10(1), pp. 11–34.

Tanaka, Y., Kanazawa, M., Fukudo, S. & Drossman, D.A., (2022), 'Biopsychosocial model of irritable bowel syndrome', *Journal of Neurogastroenterology and Motility*, 28(1), pp. 1-12.

Van Tongeren, M., Burdorf, A., Smid, T., van der Beek, A.J. & Roelen, C.A. (2012), 'Physical load at work and sickness absence due to musculoskeletal complaints: a prospective cohort study', *Occupational and Environmental Medicine*, 69(10), pp. 712–718.

Vos, T., Lim, S.S., Abbafati, C., Abbas, K.M., Abbasi, M., Abbasifard, M., Abbasi-Kangevari, M., Abbastabar, H., Abd-Allah, F., Abdelalim, A. & Abdollahi, M. (2021), 'Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019', *The Lancet*, 396(10258), pp. 1204–1222.

Vos, T., Lim, S.S., Abbafati, C., Abbas, K.M., Abbasi, M., Abbasifard, M., Abbasi-Kangevari, M., Abbastabar, H., Abd-Allah, F., Abdelalim, A. & Abdollahi, M., (2020), 'Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: A systematic analysis for the Global Burden of Disease Study 2019', *The Lancet*, 396(10258), pp. 1204-1222.

Wang, S.M., Dezinno, P., Maranets, I., Berman, M.R., Caldwell-Andrews, A.A. & Kain, Z.N., (2004) 'Low back pain during pregnancy: Prevalence, risk factors, and outcomes', *Obstetrics & Gynecology*, 104(1), pp.65–70.

Yip, V.Y.B., Wong, R.K.S. & Tse, M.M.Y. (2018), 'The effectiveness of an ergonomic intervention program in improving the occupational health of community nurses with low back pain', *Work*, 59(1), pp. 19–27.

Appendix

অনুমতিপত্র

(অংশগ্রহণকারীকে পড়ার জন্য অনুরোধ করা হলো)

আসসালামু আলাইকুম,

আমার নাম নূর ই জান্নাত। আমি ঢাকা বিশ্ববিদ্যালয়ের অধীনে বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (বিএইচপিআই) থেকে বিএসসি ফিজিওথেরাপির জন্য কোমর ব্যাথার রোগীদের জ্ঞান ও সংশ্লিষ্ট কারণসমূহ: একটি ক্রস-সেকশনাল স্টাডি' শিরোনামের প্রকল্পের জন্য একটি গবেষণা পরিচালনা করছি। আমি আপনার এই সম্পর্কে কিছু ব্যক্তিগত এবং অন্যান্য সম্পর্কিত তথ্য জানতে চাই। আপনাকে এই ফর্মে উল্লেখ করা কিছু কাজ করতে হবে, যা সম্পূর্ণ করতে প্রায় ২০-৩০ মিনিট সময় লাগবে।

আমি আপনাকে জানাতে চাই যে এটি একটি সম্পূর্ণ একাডেমিক গবেষণা এবং অন্য কোনো উদ্দেশ্যে এটি ব্যবহার করা হবে না। গবেষক সরাসরি এই ক্ষেত্রে জড়িত নন, তাই এই গবেষণায় আপনার অংশগ্রহণ আপনার বর্তমান বা ভবিষ্যতের চিকিৎসায় কোনো প্রভাব ফেলবে না। আপনার প্রদানকৃত সমস্ত তথ্য গোপনীয়ভাবে রাখা হবে এবং কোনো প্রতিবেদন বা প্রকাশনার ক্ষেত্রে নিশ্চিত করা হবে যে তথ্যের উৎস গোপন থাকবে। গবেষণা সম্পন্ন হওয়ার পর সমস্ত তথ্য মুছে ফেলা হবে। আপনার অংশগ্রহণ স্বেচ্ছাসেবী এবং আপনি যেকোনো সময় গবেষণা থেকে নিজেকে প্রত্যাহার করতে পারেন, যার জন্য কোনো নেতিবাচক ফল হবে না। এছাড়াও, আপনি ইন্টারভিউয়ের সময় যেকোনো প্রশ্নের উত্তর দিতে ইচ্ছুক না হলে বা পছন্দ না করলে উত্তর না দেওয়ার অধিকারও আপনার আছে।

যদি আপনার গবেষণা সম্পর্কে কোনো প্রশ্ন থাকে বা অংশগ্রহণকারী হিসাবে আপনার অধিকার সম্পর্কে জানার ইচ্ছা থাকে, তবে আপনি আমার সাথে এবং/অথবা আমার সুপারভাইজার ফাবিহা আলম দিশা, সহযোগী অধ্যাপক, ফিজিওথেরাপি বিভাগ, বিএইচপিআই, সিআরপি সাভার, ঢাকার সাথে যোগাযোগ করতে পারেন।

আপনার কি কোনো প্রশ্ন আছে? আমি কি আপনার সম্মতি নিয়ে ইন্টারভিউ বা কাজটি শুরু করতে পারি?

হ্যাঁ ☐ না ☐

ধন্যবাদ আপনার অংশ গ্রহেণর পাশপাশি প্রশ্নগুলোর যথাযথ উত্তর দিয়ে সহেযাগিতা করার জন্য।

অংশগ্রহণকারীর স্বাক্ষর ও তারিখ _____

তথ্য সংগ্রহ কারীর স্বাক্ষর ও তারিখ _____

স্বাক্ষীর স্বাক্ষর ও তারিখ _____

প্রশ্নাবলী (বাংলা)

রোগীর আইডি: সাক্ষাৎকারের তারিখ:

রোগীর নাম: রোগীর মোবাইল নম্বর:

রোগীর ঠিকানা:

অংশ ১: সামাজিক-জনসংখ্যাতাত্ত্বিক তথ্য (রেকর্ড/পরিচর্যাকারী/ক্লিনিক্যাল পরীক্ষার মাধ্যমে সংগ্রহ করতে হবে)

নং	প্রশ্ন	প্রতিক্রিয়া
১	আপনার বয়স কত	_____ বছর
২	আপনার লিঙ্গ কী?	১. পুরুষ ২. নারী
৩	আপনার বৈবাহিক অবস্থা কী	১. অবিবাহিত ২. বিবাহিত ৩. তালাকপ্রাপ্ত
৪	আপনি কোন এলাকায় বাস করেন?	১. শহর ২. আধা-শহর ৩. গ্রাম
৫	আপনার শিক্ষাগত যোগ্যতা কী?	১. কোনো আনুষ্ঠানিক শিক্ষা নেই ২. প্রাথমিক ৩. মাধ্যমিক ৪. উচ্চ মাধ্যমিক ৫. স্নাতক ৬. স্নাতকোত্তর ৭. অন্যান্য
৬	আপনার পেশা কী?	১. গৃহিণী ২. দোকানদার ৩. কৃষক ৪. চাকরিজীবী ৫. ব্যবসায়ী ৬. দিনমজুর ৭. ছাত্র ৮. অন্যান্য
৭	আপনার পরিবারের গড় মাসিক আয় কত?	_____টাকা
৮	আপনার উচ্চতা কত?	_____ সেন্টিমিটার
৯	আপনার ওজন কত?	_____ কেজি
১০	আপনার বিএমআই (BMI) কত?	_____

অংশ ২: কোমর ব্যাথা সম্পর্কিত জ্ঞানের প্রশ্নপত্র (LKQ)

এই প্রশ্নাবলীর উদ্দেশ্য হলো কোমরের ব্যাথা সম্পর্কে আপনার জ্ঞানের মূল্যায়ন করা। প্রতিটি প্রশ্নের উত্তর সঠিক বা ভুল তথ্য চিহ্নিত করুন, যদি আপনি উত্তর না জানেন, তবে "আমি জানি না" অপশন চিহ্নিত করুন।

১. মেরুদণ্ডের সাধারণ গঠন সম্পর্কে একটি ভুল তথ্য চিহ্নিত করুন:

ক) এতে সারভাইকাল, থোরাসিক এবং লাম্বার ভারটিব্রা এবং স্যাক্রাম রয়েছে।

খ) প্রতিটি ভারটিব্রার মধ্যে একটি ইন্টারভারটিব্রাল ডিস্ক থাকে যা "শক অ্যাবসর্বার" হিসেবে কাজ করে।

গ) ভারটিব্রাগুলি একটি নল তৈরি করে যার মধ্য দিয়ে স্পাইনাল কর্ড যায়।

ঘ) পিঠ এবং পেটের মাংসপেশীগুলি মেরুদন্ডের সমর্থনে কোন ভূমিকা রাখে না।

ঙ) আমি জানি না।

২. কোমরের ব্যাথা কী? একটি সঠিক তথ্য চিহ্নিত করুন:

ক) পাঁজরের নিচে থেকে পেলভিস পর্যন্ত ব্যথা।

খ) পাঁজরের নিচে থেকে পেলভিস পর্যন্ত ব্যথা যা পা হয়ে পায়ের পাতায় ছড়িয়ে পড়ে।

গ) পিঠের যেকোনো অংশে ব্যথা, ঘাড় থেকে কোমর পর্যন্ত হতে পারে।

ঘ) পেট, পেলভিসের নিচের অংশ বা কিডনির ব্যাথা।

ঙ) আমি জানি না।

৩. তীব্র কোমরের ব্যাথা (Acute low back pain) কী? একটি সঠিক তথ্য চিহ্নিত করুন:

ক) কোমরের ব্যাথা যা সাধারণত ৩ সপ্তাহের মধ্যে, চিকিৎসা হোক না হোক, ভালো হয়ে যায়।

খ) কোমরের এমন ব্যথা যা চিকিৎসা ছাড়া ভালো হয় না।

গ) কোমরের এমন ব্যথা যার চিকিৎসার জন্য সার্জারি প্রয়োজন।

ঘ) কোমরের ব্যাথা যা ৩ মাসের বেশি সময় ধরে থাকে।

ঙ) আমি জানি না।

৪. দীর্ঘস্থায়ী কোমরের ব্যাথা (Chronic low back pain) কী? একটি সঠিক তথ্য চিহ্নিত করুন:

ক) কোমরের ব্যথা যা সাধারণত তিন সপ্তাহের মধ্যে, চিকিৎসা হোক বা না হোক, ভালো হয়ে যায়।

খ) কোমরের এমন ব্যথা যার চিকিৎসার জন্য সার্জারি প্রয়োজন।

গ) কোমরের ব্যাথা যা ৩ মাসের বেশি সময় ধরে থাকে।

ঘ) আমি জানি না।

৫. সায়াটিকা ব্যাথা (Sciatica pain) কী? একটি সঠিক তথ্য চিহ্নিত করুন:

ক) পাঁজরের নিচে থেকে পেলভিস পর্যন্ত ব্যথা।

খ) পাঁজরের নিচে থেকে পেলভিস পর্যন্ত ব্যথা যা পা হয়ে পায়ের পাতায় ছড়িয়ে পড়ে।

গ) পিঠের যেকোনো অংশে ব্যথা, ঘাড় থেকে কোমর পর্যন্ত।

ঘ) পেট, পেলভিসের নীচের অংশ বা কিডনির ব্যাথা।

ঙ) আমি জানি না।

৬. কোমরের ব্যাথার কারণ হতে পারে এমন দুইটি সঠিক তথ্য চিহ্নিত করুন:

ক) ঠাণ্ডা এবং বার্ধক্য।

খ) অঙ্গবিন্যাস জনিত সমস্যা (Postural problem), আথ্রোসিস এবং হারনিয়েটেড ডিস্ক।

গ) টিউমার, সংক্রমণ এবং হাড় ভাঙ্গা

ঘ) ডায়াবেটিস।

ঙ) আমি জানি না।

৭. কোমরের ব্যাথার লক্ষন হতে পারে এমন দুটি সঠিক তথ্য চিহ্নিত করুন:

ক) কাশি, ক্লান্তি এবং শক্তি কমে যাওয়া।

খ) ক্লান্তি এবং সমস্ত শরীরে ব্যথা।

গ) কোমরের ব্যথা যা ভার বহনের সময় বেড়ে যায়।

ঘ) মেঝে থেকে কোন জিনিস তোলার ক্ষেত্রে অসুবিধা।

ঙ) আমি জানি না।

৮. কোমরের ব্যাথা নির্ণয়ের জন্য কী কী প্রয়োজন? দুটি সঠিক তথ্য চিহ্নিত করুন:

ক) ম্যাগনেটিক রেজোন্যান্স ইমেজিং (এমআরআই) এবং কম্পিউটারাইজড টোমোগ্রাফি (সিটি স্ক্যান) সবসময় প্রয়োজন।

খ) এক্স-রে সবসময় প্রয়োজন হয় না।

গ) রোগীর চিকিৎসা বিবরণ এবং শারীরিক পরীক্ষার মাধ্যমে প্রায়শই নির্ণয় করা সম্ভব হয়।

ঘ) ল্যাবরেটরি পরীক্ষা যেমন গ্লাইকেমিয়া, কোলেস্টেরল এবং প্রসাবের পরীক্ষা সবসময় প্রয়োজন।

ঙ) আমি জানি না।

৯. কোমরের ব্যাথার ওষুধ ব্যবহারের ক্ষেত্রে একটি ভুল তথ্য চিহ্নিত করুন:

ক) তীব্র ব্যাথার সময় অ্যান্টি-ইনফ্লামেটরি (প্রদাহনাশক) এবং ব্যথানাশক ব্যবহার করা যেতে পারে।

খ) তীব্র ব্যাথার সময় কর্টিকোস্টেরয়েড প্রয়োজন হতে পারে।

গ) দীর্ঘস্থায়ী কোমরের ব্যাথার জন্য অ্যান্টিডিপ্রেসেন্ট এবং অ্যান্টিকনভালসেন্ট ব্যবহার করা যেতে পারে।

ঘ) জেল, প্লাস্টার বা মলমের মতো প্রয়োগযোগ্য ওষুধ সবসময় নির্দেশিত হয়।

ঙ) আমি জানি না।

১০. তীব্র কোমরের ব্যাথার (Acute low back pain) চিকিৎসার ক্ষেত্রে দুটি সঠিক তথ্য চিহ্নিত করুন:

ক) এক সপ্তাহের সম্পূর্ণ বিশ্রাম প্রয়োজন।

খ) কাজ থেকে চিরস্থায়ী অসুস্থতার ছুটি প্রয়োজন।

গ) চিকিৎসা ছাড়াও কোমরের ব্যাথা ভালো হতে পারে।

ঘ) যত কম বিশ্রাম নেওয়া সম্ভব তত ভালো।

ঙ) আমি জানি না।

১১. দীর্ঘস্থায়ী কোমরের ব্যাথা (Chronic low back pain) চিকিৎসার জন্য কী ব্যবহার করা যেতে পারে? দুটি সঠিক তথ্য চিহ্নিত করুন:

ক) দীর্ঘমেয়াদী অ্যান্টি-ইনফ্লামেটরি ওষুধের ব্যবহার

খ) মেরুদণ্ডের সুরক্ষা এবং ব্যায়ামের জন্য নির্দেশনা

গ) ভারী কাজ করার সময় পেটের সাপোর্ট বেল্ট

ঘ) শর্ট ওয়েভ, আল্ট্রাসাউন্ড এবং বায়ারস ওভেন, যা নির্দেশিত শারীরিক ব্যায়ামের চেয়ে বেশি গুরুত্বপূর্ণ।

ঙ) আমি জানি না।

১২. শারীরিক কাজকর্ম এবং কোমরের ব্যাথার ক্ষেত্রে একটি ভুল তথ্য চিহ্নিত করুন:

ক) সপ্তাহে তিনবার এক ঘন্টা হাঁটা দীর্ঘস্থায়ী কোমরের ব্যাথা উন্নতি করতে পারে।

খ) তীব্র কোমর ব্যাথার জন্য তীব্র ব্যায়াম নির্দেশিত।

গ) জলক্রীড়া কার্যক্রম (Aquatic activities) কোমর ব্যাথার রোগীর জন্য উপকারী হতে পারে।

ঘ) সবচেয়ে বেশি পরামর্শ প্রাপ্ত ব্যায়াম হল পেটের এবং পিঠের মাংসপেশী শক্তিশালী করা, স্ট্রেচিং এবং শারীরিক অবস্থার উন্নতি করা।

ঙ) আমি জানি না।

১৩. মেরুদণ্ড রক্ষা করার জন্য দুটি সঠিক তথ্য চিহ্নিত করুন:

ক) সবচেয়ে ভালো ঘুমানোর উপায় হল পেটের উপর শুয়ে ঘুমানো।

খ) মোজা এবং জুতা বসে পড়ে।

গ) হাঁটু না ভেঙে মেঝে থেকে কোন জিনিস তোলা।

ঘ) বাসন মাজার সময় পেটকে সিঙ্কের সাথে ঠেকিয়ে রাখা।

ঙ) আমি জানি না।

১৪. আবারও মেরুদণ্ড রক্ষার সাথে সম্পর্কিত একটি ভুল তথ্য চিহ্নিত করুন:

ক) পাশ ঘুরে এবং হাতের সাহায্যে বিছানা থেকে সাবধানে উঠা উচিত।

খ) শরীরের একপাশে অনেক বেশি ওজন বহন করা এড়িয়ে চলা (দুই হাতে ওজন ভাগ করে নেওয়া)।

গ) মেরুদণ্ড মোচড়ানো এড়িয়ে চলা।

ঘ) সারাদিন উঁচু হিল জুতো পড়া উচিত।

ঙ) আমি জানি না।

১৫. তীব্র কোমর ব্যাথার (Acute low back pain) ক্ষেত্রে দুটি সঠিক তথ্য চিহ্নিত করুন:

ক) অংধিকাংশ রোগী তিন সপ্তাহের মধ্যে সুস্থ হয়ে ওঠে।

খ) ব্যথা ভালো হয়ে যাওয়ার পর, ভবিষ্যতে আর কোনো সমস্যা হবে না।

গ) মেরুদণ্ড রক্ষার নির্দেশনা কেবলমাত্র ব্যাথার সময় প্রয়োজনীয়।

ঘ) যাদের কোমর ব্যাথার ইতিহাস আছে তাদের জন্য মেরুদণ্ড রক্ষা এবং শক্তি সংরক্ষণ সম্পর্কে নির্দেশনা প্রদান নিয়মিত হওয়া উচিত কারণ পুনরায় ব্যথার ঝুঁকি থাকে।

ঙ) আমি জানি না।

১৬. কোমরের ব্যাথার জন্য সার্জিকাল চিকিৎসার ক্ষেত্রে দুটি সঠিক তথ্য চিহ্নিত করুন:

ক) সার্জারি কিছু ক্ষেত্রে নির্দেশিত হয়।

খ) নার্ভ রুট কম্প্রেশন এবং মেরুদণ্ডের অস্থিরতার ক্ষেত্রে সার্জারি গুরুত্বপূর্ণ হতে পারে যদি ক্লিনিকাল চিকিৎসায় উন্নতি না হয়।

গ) সার্জারি কোমরের ব্যাথার স্থায়ী নিরাময় নিশ্চিত করে।

ঘ) যেকোনো ধরনের কোমর ব্যাথার জন্য সবচেয়ে ভালো চিকিৎসা হলো সার্জারি।

ঙ) আমি জানি না।

অংশ ৩: ব্যথার মূল্যায়ন

১. কখন আপনি প্রথমবার কোমর ব্যাথা অনুভব করেন?
(যেমন: সপ্তাহ, মাস, বছর_____):
২. আপনি কত ঘনঘন ব্যথা অনুভব করেন?
□ সর্বদা
□ দৈনিক
□ সাপ্তাহিক
□ মাঝে মাঝে

৩. কোন কোন কাজ আপনার ব্যথা বাড়িয়ে দেয় বলে মনে হয়?
(যেমন: ভার উত্তোলন, বসা, বাঁকা হওয়া): _____

৪. কোন কোন কাজ আপনার ব্যথা উপশম করে বলে মনে হয়?
(যেমন: বিশ্রাম, তাপ থেরাপি): _____

অংশ ৪: স্ব-প্রশাসিত কোমর ব্যাথার সাথে সম্পর্কিত কারণসমূহ প্রশ্নাবলী

বিভাগ ১: জীবনযাপনের কারণ

শারীরিক কার্যকলাপ:

১. আপনি প্রতি সপ্তাহে কত দিন শারীরিক কার্যকলাপে (যেমন হাঁটা, ব্যায়াম) অংশগ্রহণ করেন?
□ নেই
□ ১-২ দিন
□ ৩-৪ দিন
□ ৫-৭ দিন

২. প্রতি সেশনে আপনি কতক্ষণ শারীরিক কার্যকলাপ করেন?
□ ৩০ মিনিটের কম
□ ৩০-৬০ মিনিট
□ ১ ঘণ্টার বেশি

স্থির জীবনযাপন:

৩. আপনি দিনে কত ঘণ্টা বসে থাকেন (যেমন অফিসের কাজ, টিভি দেখা, মোবাইল ব্যবহার)?
□ ২ ঘণ্টার কম
□ ২-৪ ঘণ্টা
□ ৪-৬ ঘণ্টা
□ ৬ ঘণ্টার বেশি

ধূমপান এবং অ্যালকোহল সেবন:

৪. আপনি কি ধূমপান করেন?
□ হ্যাঁ
□ না

৫. আপনি কি অ্যালকোহল সেবন করেন?
□ হ্যাঁ
□ না

৬. যদি ধূমপান/অ্যালকোহল সেবন করেন, আপনি কত ঘন ঘন এই অভ্যাসগুলো অনুসরণ করেন?
(প্রতি সপ্তাহে সিগারেট/অ্যালকোহল ইউনিটের সংখ্যা উল্লেখ করুন): _____

ডায়েট:

৭. আপনি কীভাবে আপনার মোট খাদ্যাভ্যাসকে মূল্যায়ন করবেন?
□ ভারসাম্যপূর্ণ
□ অযত্নশীল
□ অনিয়মিত

৮. আপনি কি নিয়মিত ফলমূল এবং শাকসবজি গ্রহণ করেন?
□ হ্যাঁ
□ না

বিভাগ ২: মনোসামাজিক কারণসমূহ

মানসিক চাপ ও মানসিক সুস্থতা:

১. গত এক মাসে আপনি কতবার মানসিক চাপ বা উদ্বেগ অনুভব করেছেন?
□ কখনও না
□ মাঝে মাঝে
□ প্রায়ই
□ সবসময়

২. আপনি কি মনে করেন যে মানসিক চাপ আপনার পিঠের ব্যথাকে প্রভাবিত করেছে?
□ হ্যাঁ
□ না

৩. আপনি বর্তমানে আপনার মানসিক সুস্থতার স্তর কতটুকু মূল্যায়ন করবেন? (১ = খুব খারাপ, ১০ = অত্যন্ত ভালো)
_____/১০

সহায়ক ব্যবস্থা:

৪. আপনি কি মনে করেন যে মানসিক চাপ মোকাবেলায় পরিবার ও বন্ধুদের কাছ থেকে যথেষ্ট সহায়তা পাচ্ছেন?
□ হ্যাঁ
□ না

কাজের পরিবেশ এবং চাকরির সন্তুষ্টি:

৫. আপনি আপনার কাজ/কর্মপরিবেশের সাথে কতটা সন্তুষ্ট?
□ অত্যন্ত সন্তুষ্ট
□ সন্তুষ্ট
□ নিরপেক্ষ
□ অসন্তুষ্ট
□ অত্যন্ত অসন্তুষ্ট

৬. আপনি কি মনে করেন যে আপনার কাজ আপনার কোমর ব্যথার সাথে সম্পর্কিত?
□ হ্যাঁ
□ না

বিভাগ ৩: কর্মস্থলের উপযোগী পরিবেশ

কর্মস্থলে অবস্থান:

১. আপনার কাজের প্রধান অবস্থান কী?
□ বসা
□ দাঁড়ানো
□ ভার উত্তোলন
□ মিশ্র

২. আপনি প্রতিদিন কাজের সময় কত ঘণ্টা বসে/দাঁড়িয়ে থাকেন?
(বসা এবং দাঁড়ানোর ঘণ্টার সংখ্যা উল্লেখ করুন): _____

VERBAL CONSENT STATEMENT

(Please read out to the participants)

Assalamualaikum, my name is Noor E Jannat, I am conducting this study for a B.Sc. in Physiotherapy project study dissertation titled "Knowledge and associated factor of low back pain patients: A cross sectional study" under Bangladesh Health Professions Institute (BHPI), University of Dhaka. I would like to know about some personal andother related information regarding Low Back Pain. You will perform some tasks whichare mentioned in this form. This will take approximately 20-30 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. The researcher is not directly related with this area, so your participation in the research will have no impact on your present or future treatment in this area. All information provided by you will be treated as confidential and in theevent of any report or publication it will be ensured that the source of information remains anonymous and also all information will be destroyed after completion of the study. Your participation in this study is voluntary and you may withdraw yourself at any time during this studywithout 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 me, researcher and/or my supervisor Fabiha Alam Disha, Lecturer, Dept. of Physiotherapy, BHPI,CRP, Savar, Dhaka.

Do you have any questions before I start? So, may I have your consent to proceed with the interview or work?

Yes

No

Signature of the Participant_____

Signature of the Interviewer_____

Signature of the witness_____

Questionnaires (English)

Patient's ID: Date of interview:

Patient's name: Patient's Mobile No:

Patient's address:

Part 1: Socio-Demographic Information (To be collected from Records/ Care provider/Clinical examination)

No	Question	Response
1.	Age:	---years
2.	Gender:	Male Female
3.	Marital status:	Unmarried Married Divorced
4.	Living area:	Urban Semi-urban Rural
5.	Educational level:	No formal education Primary Secondary Higher Secondary Graduate Postgraduate Others
6.	Occupation/Profession:	Housewife Shopkeeper Farmer Service holder Business Day-laborer Student Others
7.	What is your household's average monthly income?	----Taka
8.	Height	
9.	Weight	
10.	BMI	

Part 2: Low Back Knowledge Questionnaire – LKQ

The purpose of this questionnaire is to evaluate your knowledge of low-back pain. Mark the correct or incorrect alternative according to each question, if you don't know the answer, mark the option "I don't know".

1) In regards to the general anatomy of the spinal column, mark ONE incorrect alternative:

a) It has the cervical, thoracic and lumbar vertebrae and the sacrum.

b) Between each vertebra, there is an intervertebral disc that acts as a "shock absorber".

c) The vertebrae form a canal through which the spinal cord passes.

d) The back and abdominal muscles have no function in supporting the spinal column.

e) I don't know.

2) What is low back pain? Mark ONE correct alternative:

a) pain located between the lowest ribs and the pelvis

b) pain between the lowest ribs and the pelvis that radiates down the leg to the foot

c) pain in any region of the back, from the neck to the hip

d) pain in the abdomen, lower part of the pelvis or kidneys

e) I don't know.

3) What is acute low back pain? Mark ONE correct alternative:

a) pain in the lumbar region that usually improves in three weeks, with or without treatment

b) untreatable pain in the lumbar region

c) pain in the lumbar region requiring surgery

d) pain in the lumbar region lasting more than 3 months

e) I don't know.

4) What is chronic low back pain? Mark ONE correct alternative:

a) pain in the lumbar region that usually improves in three weeks, with or without treatment

b) untreatable pain in the lumbar region pain in the lumbar region requiring surgery

c) pain in the lumbar region lasting more than 3 months

d) I don't know.

5) What is sciatica pain? Mark ONE correct alternative:

a) pain located between the lowest ribs and the pelvis

b) pain between the lowest ribs and the pelvis that radiates to the leg down to the foot

c) pain in any region of the back, from the neck to the hip

d) pain in the abdomen, lower part of the pelvis or kidneys

e) I don't know.

6) These can cause low back pain. Mark TWO correct alternatives:

a) cold and aging

b) postural problems, arthrosis and a herniated disc

c) tumors, infections and fractures

d) diabetes

e) I don't know.

7) These are symptoms of low back pain. Mark TWO correct alternatives:

a) a cough, sluggishness and loss of energy

b) tiredness and pain throughout the body

c) pain in the lumbar region that worsens when carrying weight

d) difficulty in picking up objects from the floor

e) I don't know.

8) What is needed for the diagnosis of low back pain? Mark TWO correct alternatives:

a) Magnetic resonance imaging (MRI and computerized tomography (CT scan are always needed.

b) An x-ray is not always needed.

c) The diagnosis is often possible through the medical history and physical exam of the patient without the need of supplementary exams.

d) Laboratory tests such as glycemia, cholesterol and urine are always needed.

e) I don't know.

9) In regards to drug treatment for low back pain, mark ONE incorrect alternative:

a) Anti-inflammatory medicines and analgesics may be used during acute crises.

b) Corticosteroids may be necessary during an acute crisis.

c) Antidepressants and anticonvulsants may be used for chronic low back pain.

d) Topical medications such as gel, plasters or ointments are always indicated.

e) I don't know.

10) In regards to the treatment for acute low back pain. Mark TWO correct alternatives:

a) One week of absolute bed rest is indicated.

b) Definitive sick leave from work is indicated.

c) Low back pain may improve even without treatment.

d) The least possible rest is indicated.

e) I don't know.

11) What can be used to treat chronic low back pain? Mark TWO correct alternatives:

a) the long-term use of anti-inflammatory medicines

b) instructions on spine protection and exercises

c) abdominal supportive belt when performing heavy-duty activities

d) Physical means such as short waves, ultra-sound, and Bier's oven which are more important than oriented physical exercises.

e) I don't know.

12) In regards to physical activity and low back pain, mark ONE incorrect alternative:

a) Walking three times a week for an hour can improve chronic low back pain.

b) Intensive exercises are indicated for acute low back pain.

c) Aquatic activities may be beneficial to the patient with chronic low back pain.

d) The most highly recommended exercises are strengthening of the abdomen and the back muscles, stretching and physical conditioning.

e) I don't know.

13) To protect the spine, mark TWO correct alternatives:

a) The best way to sleep is on your stomach.

b) Sit down to put on your socks and shoes.

c) Pick up objects from the floor without bending your knees.

d) Wash the dishes with your stomach leaning against the sink.

e) I don't know.

14) Again, in relation to spinal protection, mark ONE incorrect alternative:

a) You should get out of bed carefully, turning sideways with the help of our hands.

b) Avoid carrying too much weight on one side of the body (divide the load between both arm)

c) Avoid twisting of the spine.

d) Wear high heels all day.

e) I don't know.

15) In regards to acute low back pain, mark TWO correct alternatives:

a) The great majority of patients recover in three weeks.

b) After recovery and improvement of the pain, the patient is cured and there is no risk of

further crises.

c) Instructions on how to protect the spine are only important during the crisis.

d) The orientations for spine protection and energy conservation should be routine in

patients with a history of low back pain because relapses are frequent.

e) I don't know.

16) In regards to surgical treatment for low back pain, mark TWO correct alternatives:

a) It is indicated in few cases.

b) It may be important in cases with nerve root compression and spinal column instability that do not improve with clinical treatment.

c) Surgery guarantees the cure of low back pain.

d) It is the best treatment for any type of low back pain

e) I don't know.

Part 3: Pain Assessment

- When did you first start experiencing low back pain? (e.g., weeks, months, years)
- How frequently do you experience pain?
    - ☐ Constantly
    - ☐ Daily
    - ☐ Weekly
    - ☐ Occasionally
- What activities seem to aggravate your pain? (e.g., lifting, sitting, bending)
- What activities seem to relieve your pain? (e.g., resting, heat therapy)

Part 4: Self-administered Associated factor of Low back pain Questionnaire

Section 1: Lifestyle Factor

Physical Activity:

1. How many days per week do you engage in physical activity (walking, exercise, etc.) ?

- None
- 1-2 days
- 3-4 days
- 5-7 days

2. How long do you engage in physical activity per session?

- Less than 30 minutes
- 30-60 minutes
- More than 1 hour

Sedentary Behavior:

3. How many hours per day do you sit (e.g., office work, TV, mobile use) ?

- Less than 2 hours
- 2-4 hours
- 4-6 hours
- More than 6 hours

Smoking & Alcohol Consumption:

4. Do you smoke?

- Yes
- No

5. Do you consume alcohol?

- Yes
- No

6. If yes to smoking/alcohol, how frequently do you engage in these habits?

(Specify the number of cigarettes/alcohol units per week) : _____

Diet:

7. How would you rate your overall diet?

- Balanced
- Unbalanced
- Irregular

8. Do you regularly consume fruits and vegetables?

- Yes
- No

Section 2: Psychosocial Factors

Stress & Mental Wellbeing:

1. In the past month, how often have you felt stressed or anxious?

- Never
- Occasionally
- Frequently
- Always

2. Do you feel that stress has affected your back pain?

- Yes
- No

3. On a scale of 1-10, how would you rate your current level of mental wellbeing?

(1 = Very poor, 10 = Excellent): _____

Support System:

4. Do you feel that you have sufficient support from family and friends when dealing with stress?

- Yes
- No

Work Environment & Job Satisfaction:

5. How satisfied are you with your job/work environment?

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very dissatisfied

6. Do you feel that your work contributes to your back pain?

- Yes
- No

Section 3: Ergonomic Factors

Work Posture:

1. What is your primary posture at work?

- Sitting
- Standing
- Lifting
- Mixed

2. How many hours do you spend sitting/standing at work daily?

(Specify the number of hours for sitting and standing): _____

Lifting and Carrying:

3. Do you frequently lift heavy objects at work?

- Yes
- No

4. If yes, how do you lift heavy objects?

- Bending at the waist
- Squatting down and lifting
- Other (Specify) : _____

Workstation Setup:

5. Is your workstation ergonomically designed (proper chair, desk height, etc.)?

- Yes
- No

6. Do you adjust your seating posture frequently?

- Yes
- No

7. Do you use any ergonomic tools (back support, standing desk, etc.)?

- Yes
- No

Permission Letter

Date: 24/12/2024

Head

Department of Physiotherapy

Centre for the Rehabilitation of the Paralysed (CRP)

Chapain, Savar, Dhaka-1343

Through: Head, Department of Physiotherapy, BHPI.

Subject: Prayer for seeking permission to collect data for conducting research project.

Sir,

With due to respect and humble submission to state that I am Noor E Jannat, a student of 4th year B.Sc. in physiotherapy at Bangladesh Health Professions Institute (BHPI). The Ethical committee has approved my research project entitled **"Knowledge and associated factor of low back pain patients: A cross sectional study"** under the supervision of Fabiha Alam, Assistant Professor, Department of Physiotherapy, BHPI. I want to collect data for my research project from the Department of Physiotherapy at CRP. So, I need permission for data collection from the Musculoskeletal Unit of Physiotherapy Department at CRP-Savar, Dhaka-1343. I would like to assure that anything of the study will not be harmful for the participants and the Department itself.

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

Yours faithfully,

Noor-E-Jannat

Noor E Jannat

4th Year B.Sc. in Physiotherapy

Class Roll: 28; Session: 2019-2020

Bangladesh Health Professions Institute (BHPI)

(An academic Institution of CRP)

CRP-Chapain, Savar, Dhaka-1343.

Forwarded for kind Approval
Sudh
24.12.2024
Dr. Shazal Kumar Das, PhD
Assistant Professor and Head
Department of Physiotherapy
BHPI, CRP, Savar, Dhaka-1343.

Forwarded
24.12.24
Prof. Dr. Mohammad Anwar Hossain, PhD
Professor Physiotherapy Department BHPI
Senior Consultant & Head
Physiotherapy Department
CRP, Savar, Dhaka-1343

Approved
21/1/25
Prof. Dr. Mohammad Anwar Hossain, PhD
Professor Physiotherapy Department BHPI
Senior Consultant & Head
Physiotherapy Department
CRP, Savar, Dhaka-1343

Date: 29.09.2024

The Chairman
Institutional Review Board (IRB)
Bangladesh Health Professions Institute (BHPI)
CRP-Savar, Dhaka-1343, Bangladesh

Subject: **Application for review and ethical approval.**

Sir,

With due respect, I would like to draw your kind attention that I am a student of B.Sc. in Physiotherapy at Bangladesh Health Professions Institute. I would like to conduct a research titled, **"Knowledge and associated factor of low back pain patients: A cross sectional study"** with myself, as the principal investigator & Fabiha Alam, Assistant Professor, Department of Physiotherapy, BHPI as my thesis supervisor. The purpose of the study is to explore the knowledge about low back pain and identify its associated factor among the patients with low back pain at the Centre for the Rehabilitation of the Paralysed(CRP).

Low Back Knowledge Questionnaire (LKQ) will be used in the study that will take about 20 to 30 minutes. Other related information will be collected from the Socio-demographic questionnaire. Data collectors will receive informed consents from all participants. Any data collected will be kept confidential.

Therefore, I look forward to having your approval for the thesis proposal and to start data collection. I also assure you that I will maintain all the requirements for study.

Sincerely yours,

Noor-E-Jannat

Noor E Jannat
4th Year B.Sc. in Physiotherapy
Session: 2019-2020, Student ID: 112190515

Recommendation from the thesis supervisor:

Fabiha

Fabiha Alam
Assistant Professor, Department of Physiotherapy
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

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

Ref: CRP-BHPI/IRB/12/2024/1035 Date: 15/12/2024

To
Noor E Jannat
4th Year B.Sc in Physiotherpy
Session: 2019-20 Student ID:112190515

Subject: Approval of the thesis proposal ''Knowledge and associated factor of low back pain patients: A cross sectional study" by ethics committee.

Dear Noor E Jannat,
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above-mentioned dissertation, with yourself, as the principal investigator and Fabiha Alam, Assistant Professor, Department of Physiotherapy, BHPI as thesis supervisor. The Following documents have been reviewed and approved:

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

The purpose of the study is to determine the purpose of the study is to explore the knowledge about low back pain and identify its associated factor among the patients with low back pain. The study involves use of a Low Back Knowledge Questionnaire (LKQ) to identify the demographic factors, explore lifestyle factors, exam psychosocial factors, assess ergonomic factors that may take 20 to 30 minutes to answer precaution for collection of specimen and there is no likelihood of any harm to the participants and participation in the study may benefit the participants or other stakeholders. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at **9 AM on 15 July, 2024 at BHPI (44th 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 & Course Coordinator, MRS
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ। ফোনঃ +৮৮ ০২ ২২৪৪৪৫৪৬৪-৫, +৮৮ ০২ ২২৪৪৪১৪০৪, মোবাইলঃ +৮৮ ০১৭৩০ ০৫৯৬৪৭
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