AWARENESS AND UTILISATION OF PHYSIOTHERAPY SERVICES FOR MUSCULOSKELETAL PAIN AMONG BASIC MEDICAL STUDENTS IN THE UNIVERSITY OF BENIN

BY

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CERTIFICATION

This dissertation by Adeoye Olukemi Elizabeth is accepted in its presented form as satisfying the dissertation requirement of the degree of Bachelor of Physiotherapy of the School of Basic Medical Sciences, College of Medical Sciences of the University of Benin.

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DEDICATION

This dissertation is dedicated to God Almighty; in him I live and move and have my being. I also dedicate this work to my late dad, my mum, my nuclear and extended family who stood by me throughout this entire journey. I’m deeply grateful for the support, love and care.

ABSTRACTS

Background / Purpose of the Study: Physiotherapy has proven effective in managing musculoskeletal conditions; however, awareness and utilisation of such services among Basic Medical Students at the University of Benin remains underexplored.

Methods / Procedure: A descriptive cross-sectional design was employed involving 336 Basic Medical Students selected through stratified random sampling. Data was collected using an adapted questionnaire on awareness and utilization of physiotherapy services from a previous study and analysed using descriptive statistics like mean, standard deviation, frequencies and percentages and Chi-square tests to examine associations between awareness, utilisation, and sociodemographic factors.

Results: This study found out that all participants were familiar with the term physiotherapy. The primary sources of information were academic settings (40.8%) and physiotherapists (25.9%). A majority (57.1%) recognized physiotherapists as healthcare providers who treat patients, although misconceptions about their roles were evident. Utilisation was low, with 32.7% having used physiotherapy services, primarily for knee and low back pain. Ignorance about physiotherapy was identified as the major barrier to utilisation. Significant associations were found between awareness and factors such as gender ($P= 0.020$, $X^2= 9.28$) and level of study ($P= 0.043$, $X^2= 37.79$), indicating variation in knowledge sources and depth. Despite low utilization, attitudes towards physiotherapy were predominantly positive, with 97.6% willing to recommend the services.

Conclusion: The study highlights the need for enhanced health education and policy strategies to improve awareness and encourage utilisation of physiotherapy services among Basic Medical Students, which may contribute to better management of musculoskeletal pain and improved academic outcomes.

Keywords: Awareness, Utilisation, Physiotherapy Services, Musculoskeletal Pain, Basic Medical Students.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Musculoskeletal disorders (MSDs) are defined as health problems of the locomotor system and include any sort of complaint ranging from minor transient discomfort to irreparable and devastating injuries (Okafor et al., 2024), they are major health concerns around the world (Taylor & Francis, 2019). They are typically classified as disorders that affect the musculoskeletal system, specifically bones, spinal discs, tendons, joints, ligaments, cartilage, nerves, and blood vessels, resulting in injuries such as sprains, strains, tears, soreness, pain, carpal tunnel syndrome, hernias and connective tissue injuries (Taylor & Francis, 2019; Korhan & Memon, 2019). According to the World Health Organization (WHO), musculoskeletal disorders are the second major cause of disability worldwide, with low-back pain being the most common (World Health Organization, Musculoskeletal conditions, 2019).

According to a new review of Global Burden of Disease (GBD) 2019 data, over 1.71 billion individuals worldwide suffer from musculoskeletal diseases such as low back pain, neck discomfort, fractures, various injuries, osteoarthritis, amputation, and rheumatoid arthritis (Cieza et al., 2021). While the incidence of musculoskeletal problems rises with age, younger persons are often affected, typically during their peak earning years (Hartvigsen, 2018). Over the last three decades, musculoskeletal problems have become the third biggest cause of disability-adjusted life years among adolescents and young adults worldwide. Countries with a high socio-demographiac index should make greater efforts to address the combined difficulties given by recent high levels and quick rises in age-standardized incidence, prevalence, and

disability-adjusted life-years rates (Guan et al., 2023).

According to Afolabi et al., 2025; not taking short breaks, physical inactivity, female gender, and mid-levels of study are significant predictors of musculoskeletal diseases among Nigerian private university students. This sheds light on risk variables that should be targeted to lower the high prevalence of musculoskeletal illnesses in this understudied university student group (Afolabi et al., 2025). University students globally lead sedentary lifestyles, averaging 10 hours per day (Castro et al., 2020). A sedentary lifestyle increases the risk of musculoskeletal pain, which is widespread among university students (Wohlmuth-Cohen et al., 2021). Sleep deprivation is frequent among young adult undergraduate students (Lubas et al., 2019), and it has been repeatedly shown to enhance musculoskeletal pain and increase mental health hazards (Chun et al., 2019). Musculoskeletal pain amongst university students has been linked to poor academic performance and decreased leisure time (Ekpenyong et al., 2013; Emmanouil et al., 2018).

Physiotherapy, as defined by World Physiotherapy, is a health care profession that is dedicated to the optimization of physical potential and the enhancement of human function and movement (World Physiotherapy, 2023). It is committed to the extension, application, evaluation, and review of the evidence that underpins and informs its practice and delivery, as well as the identification and maximization of quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation (World Physiotherapy, 2023). It employs physical ways to promote, maintain, and repair physical, psychological, and social well-being while taking into account individual health condition. It is a science-based organization dedicated to expanding, applying, evaluating, and reviewing the evidence that underpins and guides its practice and delivery. Clinical

discretion and informed interpretation are crucial to it (Chartered Society of Physiotherapy, 2010).

Physiotherapy has the potential to improve both general physical function and overall quality of life. In general, physiotherapy is a safe and effective therapeutic alternative for musculoskeletal disorders that can help patients manage their symptoms while also improving their overall health and sense of well-being (Vanti et al., 2014). Hodges and Smeets, 2015 discovered that in patients with musculoskeletal pain, the goal of physiotherapeutic treatment is to provide individualized patient care to develop pain management strategies, rehabilitate, and restore physical function through education, activities, and encouragement to engage in consistent physical activity. Physical agent modalities are utilized by physiatrists and physical therapists to provide an additive therapeutic effect, and they are gaining popularity in the scientific literature, not only for musculoskeletal pain relief, but also for promoting pain-free functional recovery, especially when combined with physical exercise (Akuyz & Kenia, 2014) (De Sire et al., 2021).

A study published in the Journal of Orthopedic & Sports Physical Therapy found that early intervention with physical therapy can aid improve pain management in patients with musculoskeletal injuries (Childs et al., 2015). These therapies may involve soft tissue mobilization, stretching, and pain-relieving modalities such as ultrasound, dry needling, or cryotherapy. Early physical therapy can address these concerns while also lowering the likelihood of additional consequences. Early intervention with physical therapy can help reduce later consequences from musculoskeletal injuries (Reiman et al., 2017). This demonstrates how timely rehabilitation can reduce long-term repercussions.

Physiotherapy has progressed greatly over time, from basic physical therapies to

specialized treatments suited to individual patient needs. Neurology, Pediatrics, Orthopedics, Cardiopulmonary Rehabilitation, Geriatrics, Oncology, Women's Health, and Sports Medicine are among the many specialties that physiotherapists today practice. Despite these developments and the widening area of treatment, there is a significant gap in public awareness and comprehension of physiotherapy's full potential and role in healthcare delivery (Bolarinde et al., 2021).

According to a study done in the south eastern part of Nigeria (Maruf et al., 2012), it was found that majority of the population is aware of physiotherapy services and has good beliefs and attitudes about them. However, physiotherapy has not yet become part of primary healthcare services. Students-in-training (tertiary institutions) may seek physiotherapy services in primary health centers but may not be aware that physiotherapists are to be involved. Physiotherapists should further raise knowledge of their profession among the general population (Maruf et al., 2012).

1.2 Statement of the Problem

Exploring physiotherapy awareness and utilisation among basic medical students is crucial since university students, particularly those in medical programs, are prone to musculoskeletal pain as a result of academic pressures, bad posture, and a lack of physical activity (Oghumu et al., 2025). Additionally, musculoskeletal pain can have a severe impact on students' academic performance, attendance, and overall wellness. Untreated musculoskeletal pain can develop into chronic illnesses, compromising students' future health and quality of life.

The potential benefits of improving health seeking behavior and utilisation of physiotherapy services can help prevent musculoskeletal pain from becoming chronic, it would also aid in reducing the healthcare costs associated with chronic musculoskeletal conditions. Managing this musculoskeletal pain can also help

students to focus on their studies, achieve better academic outcomes, promote physical activity, reduce stress and improve mental health.

Research on university students' awareness of and use of physiotherapy services, especially among basic medical students, is scarce. Additionally, there is a dearth of information on this subject in the Nigerian setting especially with the absence of physiotherapy in primary health care. In order to improve student health outcomes and raise knowledge of and use of physiotherapy services, this study intends to guide focused initiatives.

1.3 Research Questions

The study was designed to answer the following questions:

i. What is the level of awareness of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

ii. What is the level of utilisation of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin?

iii. What is the association between level of awareness and utilisation of physiotherapy services for musculoskeletal pain among Basic Medical Students in University of Benin?

iv. What is the association between sociodemographic characteristics (e.g., age, gender, level of study, course of study) and level of awareness of physiotherapy services for musculoskeletal pain among Basic Medical Students in the University of Benin?

v. What is the association between sociodemographic characteristics (e.g., age, gender, level of study, course of study) and utilisation of physiotherapy services for musculoskeletal pain among Basic Medical Students in the University of Benin?

1.4. Aim of the Study

The aim of this study was to assess the level of awareness and utilisation of physiotherapy services for musculoskeletal pain among Basic Medical Students in the University of Benin.

1.5 Specific Objectives

The specific objectives of this study were to:

i. Determine the level of awareness of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

ii. Determine the level of utilisation of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

iii. Determine the association between level of awareness and utilisation of physiotherapy services for musculoskeletal pain among Basic Medical Students in University of Benin.

iv. Determine the association between sociodemographic characteristics (e.g; Age, Gender, Level of Study, Course of Study) and level of awareness of physiotherapy services for musculoskeletal pain among Basic Medical Students in University of Benin.

v. Determine the association between sociodemographic characteristics (e.g., age, gender, level of study, course of study) and utilisation of physiotherapy services for musculoskeletal pain among Basic Medical students in the University of Benin.

1.6 Main Hypotheses

There would be no significant association between level of awareness and utilisation of physiotherapy services for musculoskeletal pain among Basic Medical Students in the University of Benin; there would be no significant association between level of awareness of physiotherapy services for musculoskeletal pain and sociodemographic

characteristics of age, gender, level of study, and course of study among Basic Medical Students with musculoskeletal pain in the University of Benin; as well as, there would be no significant association between utilisation of physiotherapy services for musculoskeletal pain and sociodemographic characteristics of age, gender, level of study, and course of study among Basic Medical Students with musculoskeletal pain in the University of Benin.

1.6.1 Sub-Hypotheses

i. There would be no significant association between awareness of physiotherapy services and their utilisation among Basic Medical Students with musculoskeletal pain in the University of Benin.

ii. There would be no significant association between age and level of awareness of physiotherapy services for musculoskeletal pain among Basic Medical Students in the University of Benin.

iii. There would be no significant association between age and utilisation of physiotherapy services for musculoskeletal pain among Basic Medical Students in the University of Benin.

iv. There would be no significant association between gender and level of awareness of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

v. There would be no significant association between gender and utilisation of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

vi. There would be no significant association between the level of study and level of awareness of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

vii. There would be no significant association between the level of study and utilisation of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

viii. There would be no significant association between the course of study and level of awareness of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

ix. There would be no significant association between the course of study and utilisation of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

1.7 Significance of Study

i. The findings from this study may help improve health education among medical students as regarding the benefits of physiotherapy.

ii. It could inform institutional policies or wellness programs aimed at addressing university students' musculoskeletal health.

iii. It may highlight gaps in service accessibility or perception, guiding better outreach by physiotherapy units.

iv. It would contribute to the existing literature on healthcare awareness and utilization in academic environments, particularly universities.

1.8 Scope and Delimitation of the Study

This study comprised of students of Basic Medical Sciences of the University of Benin. The study would be delimited to the awareness and utilisation questionnaire adapted from Maruf et al. (2012).

1.9 Limitation of the Study

The limitations of this study were:

i. This study relied on self-reported data from undergraduate students, which may

introduce bias such as underreporting or overreporting of awareness and utilization of physiotherapy services.

ii. The study was conducted in a single university setting, which may limit the generalizability of the findings to other student populations or geographic locations.

iii. The study was unable to capture detailed reasons behind knowledge deficits and utilization behaviors.

1.10 Definition of Terms

Awareness: This refers to the state or quality of being conscious, perceptive, or informed about something, ranging from one's internal emotions to external environments, concepts, or events. It encompasses recognition, attention, and understanding across personal, social, professional, and environmental domains. (Merriam-Webster, 2025).

Utilisation: Utilisation is defined as the act or fact of utilising something; especially: the degree to which something is used. (Merriam-Webster, 2023).

Physiotherapy Services: Healthcare services concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation. (World Physiotherapy, 2017).

Musculoskeletal Pain: Pain that affects the bones, muscles, ligaments, tendons, and nerves. It can be acute (having a rapid onset with severe symptoms) or chronic (long lasting). (World Health Organization, 2021).

1.11 Operational Definition of Terms

Basic Medical Students: Students enrolled in pre-clinical or foundational medical science programmes, studying courses such as Anatomy, Physiology, Medical Biochemistry, Physiotherapy, Nursing, Medical Laboratory at the University of Benin.

University of Benin: A tertiary institution located in Ugbowo, Benin City, Nigeria, where the study is conducted, focusing on the students within its Basic Medical Sciences Faculty.

1.12 List of Abbreviations

APTA - American Physical Therapy Association

DALY - Disability-Adjusted Life Years

GBD - Global Burden of Disease

MSDs - Musculoskeletal Disorders

MSK - Musculoskeletal

WHO - World Health Organization

YLD - Years Lived with Disability

YLL - Years of Life Lost

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 Musculoskeletal Pain

Pain linked with musculoskeletal (MSK) problems is a prevalent medical and socioeconomic issue worldwide. Musculoskeletal pain is described as either an acute or chronic pain that affects bones, muscles, ligaments, tendons, and even nerves (Smith et al., 2014). It includes a variety of pain syndromes, ranging from neuropathic pain to local pain (World Health Organization, 2019).

Despite being largely somatic in nature, musculoskeletal pain does not preclude the occurrence of additional pain syndromes, such as visceral and/or neuropathic pain syndromes. Although rheumatoid arthritis, osteoarthritis, and persistent low back and neck pain are the most common types of musculoskeletal pain, sprained muscles, fracture-related pain, shoulder pain, and other types of pain are also included. Although it can happen at any age, musculoskeletal discomfort is more likely to arise as people age. Almost everyone experiences musculoskeletal discomfort at some point in their lives. The physical, psychological, and socioeconomic effects of MSK pain are highlighted by the prevalence of recurring or chronic clinical symptoms (WHO, 2019; Babatunde et al., 2017).

Acute musculoskeletal pain is defined as pain affecting muscles, bones, ligaments, and tendons. Acute musculoskeletal pain lasts less than 4 weeks and includes strains and sprains, soft tissue injuries, whiplash, and various other conditions ranging from nonsurgical fractures to contusions (Busse et al., 2020)

Chronic MSK pain leads to a markedly reduced quality of life and increases suffering

in day-to-day activities, drug use, and the high frequency of sick leave and disability pensions. Additionally, it presents a significant public health issue, resulting in high expenses for disability insurance and healthcare systems (Cimmino et al., 2011). Globally, the leading cause of disability is chronic musculoskeletal pain, namely low back pain (Vos et al., 2016). The World Health Organization (WHO) estimates that 1.75 billion individuals worldwide or 20–33% of the population have chronic musculoskeletal pain in one form or another (WHO, 2019).

Among Nigerian students attending private universities, the following factors are important predictors of musculoskeletal disorders: female gender, mid-levels of study, lack of brief breaks, and physical inactivity (Afolabi et al. 2025). In this understudied group of college students, the high prevalence of musculoskeletal illnesses can be decreased by focusing on risk factors (Afolabi et al. 2025). Around the world, university students lead inactive lives, averaging 10 hours per day (Castro et al. 2020). It should come as no surprise that university students frequently have musculoskeletal pain, which is predisposed by a sedentary lifestyle (Wohlmuth-Cohen et al. 2021). Sleep deprivation is another widespread problem among young adult undergraduate students (Lubas et al. 2019). It has been widely shown that sleep deprivation exacerbates musculoskeletal pain and raises risks connected to mental health (Chun et al. 2019). Musculoskeletal pain has been linked to lower academic achievement and less free time among college students (Ekpenyong et al. 2013; Emmanouil et al. 2018).

2.1.2 Physiotherapy Services

According to the Occupational Outlook Handbook - Physical Therapists (2021), physiotherapy helps individuals with illnesses or injuries that impede their ability to move and perform daily activities. Physiotherapists diagnose and manage patients

based on their history and physical examination. Laboratory and imaging procedures, such as X-rays, CT-scans, or MRIs, may also be used as needed. Physiotherapists can employ sonography to identify and treat common musculoskeletal, neurological, and pulmonary disorders (Vieira et al. 2020). Electrodiagnostic testing, such as electromyograms and nerve conduction velocity testing, can also be used (American Physical Therapy Association Educational Guidelines, 2011).

Physiotherapy management typically involves prescribed exercises, manual therapy, mechanical devices, education, electrophysical modalities, assistive devices, prostheses, orthoses, and other interventions. Furthermore, physiotherapists work with individuals to prevent mobility loss before it occurs by developing fitness and wellness-oriented programs for healthier and more active lifestyles. They also provide services to individuals and populations to develop, maintain, and restore maximum movement and functional ability throughout the lifespan. This includes treating people whose mobility and function are jeopardized by aging, injury, disease, or environmental causes. Functional movement is central or key to what it means to be healthy (Physical Therapy, Institute for Quality and Efficiency in Health Care, 2024)

Physical therapy is a diverse profession with specialties in musculoskeletal, orthopedics, cardiac, neurology, endocrinology, sports medicine, geriatrics, pediatrics, women's health, wound care, and electromyography. Neurological rehabilitation is a fast expanding field. Physiotherapists work in a variety of settings, including private physical therapy clinics, outpatient clinics, health and wellness clinics, rehabilitation hospitals, skilled nursing facilities, extended care facilities, private homes, education and research centers, schools, hospices, industrial workplaces, fitness centers, and sports training facilities (APTA Background Sheet, 2008). Physical therapists can also

work in non-patient care settings such as health policy (Physical Therapy, Oxford Academic, 2010), health insurance, health care administration, and as health care executives. Physical therapists serve as experts in medical-legal matters, including peer review and independent medical examinations ("ORTIZ vs. EXAMWORKS, INC., 470 Mass. 784").

Physical therapy is both clinically and cost-effective in the evaluation and treatment of musculoskeletal problems (Bornhöft et al. 2019). Musculoskeletal practice today is often divided into three components: education, exercise, and physical therapy. Physiotherapists are educated to diagnose musculoskeletal diseases using clinical evaluation, history collection, and physical examination. This enables accurate diagnosis and the development of personalized treatment programs (Jette et al., 2009). Physiotherapists use a variety of non-pharmacological pain management approaches, including manual therapy (e.g., mobilizations and manipulations), electrotherapy (e.g., TENS, ultrasound), dry needling, and exercise therapy (Bialosky et al., 2009). Therapeutic exercise is essential for addressing musculoskeletal disorders since it increases strength, flexibility, balance, and coordination. Exercise regimes are customized for illnesses such as low back pain, osteoarthritis, tendinopathies, post-fracture, and post-surgical rehabilitation (Hayden et al., 2005). Education enables patients to comprehend their illness and follow long-term self-management techniques; themes covered include posture correction, ergonomics, lifestyle changes, and activity pacing (Liddle et al., 2007).

In order to guarantee the most effective possible treatment of patients who struggle with musculoskeletal and rheumatic diseases, a combination of different rehabilitation modalities could be associated with balneotherapy, which includes several therapeutic exercise protocols, resulting in an effective multimodal strategy (Tognolo et al., 2022).

These advantageous characteristics could be the consequence of a combination of mechanical (hydrostatic force) and thermal (mineral water or mud temperature) influences. In reality, thermal water immersion may increase buoyancy, resulting in a non-bearing impact, whereas hydrostatic pressure may be beneficial for pain alleviation and joint and muscle function. Physical therapists and rehabilitation medicine professionals commonly diagnose and treat illnesses characterized by pain, which can be regarded a disease in itself (Raffaeli and Arnaudo. 2017).

2.1.3 Awareness and Utilization of Healthcare Services

Awareness refers to the state or quality of being conscious, perceptive, or informed about something, ranging from one's internal emotions to external environments, concepts, or events. It encompasses recognition, attention, and understanding across personal, social, professional, and environmental domains (Merriam-Webster, 2025). Recognizing symptoms, comprehending the nature of the problem, and being informed about potential treatments, such as physiotherapy, all contribute to musculoskeletal condition awareness (Briggs, et al. 2018).

A study by Saad et al. (2020) showed that patient knowledge and perception of physiotherapy significantly influence its utilization. Similarly, in Nigeria, Odebiyi et al. (2017) reported that lack of awareness and poor referral systems limited access to physiotherapy among patients with chronic pain. Furthermore, health system challenges, including workforce shortages and policy gaps, also play a role (WHO, 2021). To enhance utilization, strategies such as public awareness programs, inclusion of physiotherapy in universal health coverage schemes, and interdisciplinary collaboration in healthcare delivery have been recommended (Al-Eisa et al, 2022).

2.2 Epidemiology of Musculoskeletal Pain

2.2.1 Global and Regional Prevalence

According to the 2019 Global Burden of Disease (GBD) data, 1.71 billion people worldwide suffer from musculoskeletal conditions such as low back pain, neck pain, fractures, injuries, osteoarthritis, amputation, and rheumatoid arthritis (Cieza et al. 2021).

While the prevalence of musculoskeletal diseases varies with age and diagnosis, they affect people of all ages all over the world. High-income countries are the most affected (441 million people), followed by countries in the WHO Western Pacific Region (427 million) and South-East Asia Region (369 million).

Musculoskeletal diseases are also the leading cause of years lived with disability (YLDs) worldwide, accounting for roughly 149 million YLDs, or 17% of total YLDs. Low back pain is the main contributor to the overall burden of musculoskeletal conditions (570 million prevalent cases worldwide, responsible for 7.4% of global YLDs).

Amputations (180 million people; 5.5 million YLDs), rheumatoid arthritis (18 million people; 2.4 million YLDs), gout (54 million people; 1.7 million YLDs), osteoarthritis (528 million people; 19 million YLDs), fractures (440 million people worldwide; 26 million YLDs), and other musculoskeletal conditions (453 million people; 38 million YLDs) are additional factors contributing to the overall burden of musculoskeletal co nditions (data from IHME Viz Hub and WHO Rehabilitation Needs Estimator).

Although musculoskeletal disorders are more common in older adults, they can also affect younger people, frequently in their prime earning years. For instance, low back discomfort is the primary cause of an early departure from the employment, and pediatric autoimmune inflammatory diseases like juvenile arthritis have an impact on

children's development. Early retirement has a significant negative impact on society in terms of both direct health care expenditures and indirect costs (such as lost productivity or absenteeism from work). According to projections, the number of persons suffering from low back pain is expected to rise in the future, and this trend is expected to accelerate in low- and middle-income nations (Hartvigsen et al. 2018).

In 2020, there were 494 million (95% CI 431–564) cases of various musculoskeletal illnesses worldwide, up 123·4% (116·9–129·3) from 221 million in 1990. It was predicted that the number of cases of various musculoskeletal disorders will rise by 115% between 2020 and 2050, reaching an estimated 1060 million (95% UI 964–1170) prevalent instances in 2050. Most regions were expected to see at least a 50% increase in cases during this time. In both males and females, the worldwide age-standardized prevalence of various musculoskeletal disorders peaked between the ages of 65 and 69 and was 47·4% (44·9–49·4) greater in females than in males. Other musculoskeletal disorders accounted for 42·7 million [29·4–60·0] YLDs worldwide in 2020, ranking sixth in terms of causes, and were linked with 83 100 deaths (73 600–91 600).

Other musculoskeletal disorders were the 19th leading cause of DALYs, the 117th leading cause of YLLs, and the sixth leading cause of YLDs worldwide in 2020. In 2020, there were 42·7 million YLDs worldwide (95% UI 29·4–60·0), with the largest number occurring in south Asia (12 800 000 [8 880 000–18 100 000]). YLDs and prevalence peaked in the 60–69 age range. The age-standardized rate of YLDs was higher in females (604 per 100,000 people) than in males, and the global age-standardized prevalence of other musculoskeletal disorders was 47·4% (44·9–49·4) higher in females than in males. These rates increased with age and peaked in both sexes at 65 and 69 years.

An estimated 1060 million (95% UI 964–1170) persons worldwide would suffer various musculoskeletal illnesses in 2050, a 115% increase from 2020 to 2050 based on projected demographic trends (107–124). The relative contributions of population aging, population growth, and changes in prevalence to the anticipated rise in cases are displayed by a decomposition analysis conducted both globally and by area. The main cause of the anticipated changes in prevalence in the central, eastern, western, and southern parts of sub-Saharan Africa is population growth. The anticipated rise in cases in these locations was also influenced by changes in age-standardized prevalence. Due to slower population growth, a little decrease in prevalence is anticipated in central Europe. It is anticipated that the prevalence will stay constant in high-income Asia Pacific and eastern Europe, primarily due to slower population increase (Gill et al, 2021).

2.2.2 Prevalence among undergraduate students

Musculoskeletal pain is recognized to be work-related, with varying degrees of affectation within occupational groups (Ayanniyi et al, 2016). University undergraduates, who are primarily concerned with their studies, may constitute a unique "occupational" category. According to recent research, university students are at a greater risk for musculoskeletal pain due to their lengthy hours of schoolwork and reading (Smith and Leggat, 2007; Ayanniyi et al, 2010). Undergraduate populations have been investigated for particular musculoskeletal pain and shown to have a higher chance of developing it (Nyland and Grimmer, 2003; Rising et al, 2005; Ayanniyi et al, 2010).

Given that approximately 30% of school time is spent in prolonged sitting positions, the school environment is considered to be a highly significant setting for the development of musculoskeletal discomfort (Rising et al, 2005; Smith and Leggat,

2007; Ayanniyi et al, 2010) (Nurul et al 2009). Apart from school-related activities, adolescents and young adults' musculoskeletal discomfort has been linked to high activity levels and the injuries that result from them (De Inocencio, 2004). Early musculoskeletal pain is important for public health since research shows that musculoskeletal pain that occurs throughout infancy and adolescence later moves into adulthood (Brattberg, 2004; Hestbaek et al, 2006; Kamaleri et al, 2009).

In a research on low-back pain (LBP) and neck or shoulder discomfort in Finnish teenagers, Vikat et al. (2000) discovered that musculoskeletal pain was more common among students in higher academic levels. This could suggest that the musculoskeletal system is under more strain at higher university study levels or that accumulated non-symptomatic musculoskeletal illnesses start to show symptoms at these levels.

A lower quality of life has been linked to psychological issues including depression and psychosomatic symptoms, which have also been suggested as risk factors for musculoskeletal pain (Dajpratham et al. 2010). Psychological problems and low self-reported health also exacerbate the spread of musculoskeletal discomfort (Daher and Halperin. 2021).

The advancement of mobile technology in the twenty-first century has brought a growing number of individuals together on a regular basis through their phones. Excessive use of electronic gadgets, such as social media, cell phones, and tablets, can lead to text neck syndrome (Abdali and Sherwani. 2020). This is a result of repetitive, strong tension on the flexed neck. It causes headaches and soreness in the neck, shoulders, and head. It is an increasing health risk, and youth may be more vulnerable than older generations. Musculoskeletal issues have been linked to uncomfortable postures, constant use of computers and smartphones, and frequent or extended laptop use (Bubric and Hedge, 2016).

Among college students, musculoskeletal pain is very common. Risk factors that are closely linked to musculoskeletal pain include a family history of musculoskeletal problems, a history of trauma, the position of the hands and neck when using electronic devices, the amount of time spent using them, and frequent exercise. There is compelling evidence that a greater level of physical activity is important for improving musculoskeletal (MSK) system function and reducing pain. Universities should put in place educational initiatives to increase knowledge and conduct health screenings regarding the negative effects of gadget use on musculoskeletal health and the advantages of consistent exercise (Kandasamy et al 2024).

The lifetime and point prevalences of musculoskeletal pain among Nigerian undergraduates are 54.50% and 51.7%, respectively. The anatomical locations most commonly impacted by musculoskeletal discomfort in undergraduates are the neck and the low back. Long periods of bad posture during lectures are thought to be the main source of musculoskeletal pain, which restricts day-to-day activity. Musculoskeletal pain was significantly correlated with age, sex, length of lecture, and extracurricular activities. It is essential to implement preventive measures to lessen musculoskeletal pain among Nigerian college students (Ayanniyi and Udofia, 2016).

2.3 Relevant Anatomy and Physiology

2.3.1 Overview of the musculoskeletal system

The human locomotor system, formerly known as the activity system, and the human musculoskeletal system are organ systems that enable movement through the use of the skeletal and muscular systems. The body receives shape, support, stability, and mobility from the musculoskeletal system. The bones of the skeleton, muscles, cartilage, tendons, ligaments, joints, and other connective tissue that holds tissues and organs together make up the human musculoskeletal system. The main purposes of

the musculoskeletal system are to support the body, permit movement, and safeguard important organs (Mooar and Pekka. 2007). The system's skeletal component houses essential haematopoietic system components and acts as the primary calcium and phosphorus storage system (Kahn and Cynthia; Scott Line 2008).

This system shows how connective tissue, such as tendons and ligaments, binds bones to other bones and muscle fibers. The body is stabilized by the bones. In addition to helping bones move, muscles also hold them in place. Different bones are joined by joints to permit movement. The ends of the bones cannot brush against one another directly because of cartilage. To move the bone that is joined at the joint, muscles must contract.

2.3.2 Skeletal System

According to Applegate, Edith; Kent Van De Graaff (2010), the skeletal system performs a number of vital tasks, including giving the body its shape and form, support, and protection, enabling mobility, producing blood for the body, and storing minerals. The human skeletal system's bone count is a contentious issue. Although humans have more than 300 bones at birth, many of them fuse together as they get older. Consequently, the average adult skeleton has 206 bones. Depending on how the count is determined, there are different numbers of bones. Although some people believe that a certain structure is a single bone with several components, others might disagree (Engelbert, 2009). Bones can be divided into five broad categories. These include sesamoid bones, flat bones, irregular bones, long bones, and short bones. Ligaments, tendons, muscles, and cartilage support the individual and fused bones that make up the human skeleton. The axial skeleton, which comprises the vertebral column, and the appendicular skeleton are its two separate parts; it is a complicated structure (Gary and Faar, 2002).

Function

The skeletal system provides a structure for tissues and organs to adhere to. This system protects crucial organs. The skull and rib cage provide protection for the brain and lungs, respectively. Long bones include two types of bone marrow (yellow and red). Yellow marrow, located in the marrow cavity, is composed of fatty connective tissue. During starvation, the body converts the fat in yellow marrow into energy. According to Applegate and Van De Graaff (2010), the red marrow of certain bones produces around 2.6 million red blood cells every second to replace those damaged by the liver. Adults produce all types of erythrocytes, platelets, and leukocytes. Erythrocytes, platelets, and leukocytes migrate to the bloodstream to perform specific functions. Another function of bones is to store minerals. Minerals stored mostly include calcium and phosphorus. This storage "device" regulates mineral balance in the bloodstream. Minerals are kept in the bone when their concentration is high and will be removed from the bone when it is low.

2.3.3 Muscular System

Muscles can be classified as smooth, skeletal, or cardiac. Involuntarily controlled smooth muscles regulate the movement of materials within the lumens of hollow organs. Because of the components found in their cells, skeletal and cardiac muscles contain striations that may be seen under a microscope. The musculoskeletal system consists solely of skeletal and smooth muscles, and only muscles have the ability to move the body. Similar to smooth muscles, cardiac muscles are located in the heart and are solely employed for blood circulation; they are not controlled voluntarily. Around joints, skeletal muscles are grouped in opposing directions and connected to bones (Mooar and Pekka, 2007). In order for muscles to contract, electrical currents from the central nervous system must pass through nerves, which are responsible for

communicating neural impulses (Bárány et al., 2002).

2.3.4 Contraction Initiation

A sequence of events takes place in humans when a muscle contracts. The motor neuron transmits a signal from the somatic nervous system to the muscles, causing them to contract. Neurotransmitters are released from the nerve terminal when the motor neuron depolarizes. The neuromuscular junction is the area that separates the muscle cell from the nerve terminal. These neurotransmitters attach to particular receptor locations on the muscle fiber's cell membrane after diffusing across the synapses. An action potential is produced and the permeability of the sarcolemma is changed when sufficient receptors are triggered. We call this process initiation

2.3.5 Tendons

Tendons are fibrous connective tissue that connects muscles to bones (Jonathan & Cluett, 2008). Muscle fibers join with tendons at their distal and proximal ends, and the tendons adhere to the periosteum of particular bones at their origin and insertion. As muscles contract, tendons transfer the force to the relatively stiff bones, tugging on them and creating movement. Tendons may stretch significantly, allowing them to act as springs during locomotion and so conserve energy.

2.3.6 Joints

Individual bones are joined by joints, which may permit mobility by allowing bones to rub against one another. There are three types of joints: diarthroses, which permit a great deal of movement between two or more articular heads; amphiarthrosis, which permits some movement; and false joints, also known as synarthroses, which are immobile, primarily fibrous, and permit little to no movement. The synovial membranes create a solution known as synovial fluid, which lubricates synovial joints—joints that are not physically linked. This fluid, which is contained within an

articular capsule and binds the joint with its tight tissue, reduces friction between the articular surfaces (Gary and Farr, 25 June 2002).

2.3.7 Ligaments

According to Gary and Farr (25 June 2002), a ligament is a little band of dense, white, fibrous-elastic tissue. A joint is created when the ends of bones are joined by ligaments. The majority of ligaments restrict dislocation or stop specific motions that could result in fractures. Because they are just elastic, pressure causes them to extend more and more. An unstable joint could result from the ligament breaking when this happens. Ligaments can also limit some movements; for example, they can partially limit hyperflexion and hyperextension. Additionally, ligaments restrict movement in specific directions (Bridwell and Keith. 2009).

2.3.8 Bursae

A bursa is a tiny fluid-filled sac consisting of white fibrous tissue and coated by synovial membrane. Bursas can be generated by a synovial membrane that extends outside the joint capsule. Bursa, which are filled with synovial fluid, act as a cushion between bones, tendons, and muscles around joints. They can be found around nearly every major joint in the body.

2.4 Pathophysiological Mechanisms of Pain

Pain genesis and persistence are commonly assigned to three pain pathophysiology mechanisms: nociceptive, neuropathic, and central sensitization, which may function alone or in combination (Clauw et al. 2019; Pergolizzi et al. 2014).

2.4.1 Nociceptive Pain

Nociceptive pain generally arises from tissue damage caused by trauma, non-healing injury, or inflammatory processes, and it is classified into two types: somatic pain (musculoskeletal system injuries) and visceral pain (internal organ injury, often felt

indirectly) (Clauw et al. 2019; Stanos et al., 2016; Orr et al., 2017). The two types of primary afferent nociceptors, Aδ- and C-fibers, send nerve signals to the dorsal horn of the spinal cord and ascending cortical pathways to the brain in response to real or potentially hazardous chemical, mechanical, or thermal stimuli. Peripheral sensitivity to future stimuli increases if the pain threshold for normal tissue injury is exceeded (Clauw et al. 2019). The constant presence of stimuli and the ensuing sensitization may cause alterations in the central nervous system and peripheral nerves, even though sensitization is only transient if following stimuli are brief (Clauw et al. 2019).

2.4.2 Neuropathic Pain

Lesions in or illnesses affecting the somatosensory nerve system are the traditional causes of neuropathic pain (Clauw et al. 2019). Trauma or injury sustained during surgery is another factor contributing to neuropathic pain. Cell death and abnormal neural processing in the central or peripheral nervous systems may follow nerve loss or injury (Clauw et al. 2019). Unusual pain perceptions may result from these alterations (Clauw et al. 2019).

2.4.3 Cortical Sensitization

Central sensitization (sometimes called nociplastic pain, sensory hypersensitivity, or central hypersensitivity) is the perception of pain in the absence of pain receptor activation (Clauw et al. 2019). As a result of the neuronal remodeling that underpins central sensitization, afferent nerve fiber sensitivity increases to the point where a stimulus that would normally be considered non-harmful produces a pain response (Pergolizzi, et al. 2014). This effect is caused by several molecular modifications (Clauw et al. 2019).

2.5 Common Sites of Musculoskeletal Pain in Undergraduate Students

Undergraduate students frequently experience neck pain as a result of extended screen time and bad posture when reading or studying (AlShayhan and Saadeddin. 2018). One of the most common complaints is low back discomfort, which is linked to poor ergonomics and extended sitting (Smith et al. 2007). Carrying bulky bags or setting up a desk incorrectly can cause shoulder pain (Yang et al. 2007). Overuse of mobile devices, typing, and writing has been associated with wrist and hand pain (Mwaka et al. 2015). Because of static posture, upper back pain often co-occurs with shoulder and neck pain (Auvinen et al. 2007).

73.6% of undergraduate students suffered from musculoskeletal diseases in various anatomical locations. The neck was the most frequent region across all variables. Senarath et al. (2021) found that the lower back was the second most commonly affected region, followed by the ankle. A survey found that 42.54% (n = 228) of students reported neck discomfort, 44.59% (n = 239) reported low back pain, and 46.27% (n = 248) reported shoulder pain. Another study discovered that 69.4 and 62.2% of teenagers experience neck and low back discomfort, respectively (Al Rawaf et al. 2019).

2.6 Awareness and Utilization of Physiotherapy Services

2.6.1 Determinants of Awareness of Physiotherapy Services

Individual knowledge and attitudes, interpersonal relationships among healthcare professionals, community perceptions and social supports, organizational accessibility and resources, and public policy frameworks all play a role in raising awareness of physiotherapy services. A socioecological framework is important for thoroughly understanding these determinants because it captures multi-level barriers and

facilitators that influence knowledge and utilization of physiotherapy services (Shakya et al., 2024).

Individual determinants:

Understanding the extent and advantages of physical therapy is one of the most important things at the individual level. Both the general public and some medical professions are less aware of physiotherapy's wider functions beyond musculoskeletal problems (Shakya et al., 2024). Many physiotherapists lack powerful leadership positions or advocacy skills to raise the prestige of their profession, hence, self perception and advocacy abilities are crucial (Shakya et al., 2024).

Interpersonal factors:

Inter-professional interactions between physiotherapists and other healthcare practitioners have a substantial impact on patient awareness and referral practices. In Saudi Arabia, studies found that physicians frequently have little understanding regarding physiotherapy services, with nearly half having insufficient information and a lack of interaction between doctors and physiotherapists (Al-Eisa et al., 2018). Negative or limited acknowledgement of physiotherapy by physicians leads to low referral rates and poor utilisation, emphasizing the need of collaborative networks and mutual respect within healthcare teams (Al-Eisa et al., 2018; Shakya et al., 2024).

Community Determinants:

Cultural views and societal understanding of physiotherapy and disability are examples of community-level variables. Low health-seeking behavior and delayed access to rehabilitation services are caused by a lack of public awareness regarding the advantages of physical therapy. Access to physiotherapy is further limited in Nepal by stigma and misconceptions about impairments, as well as by a lack of social and familial support (Shakya et al., 2024). Increasing community acceptability and

utilisation of physiotherapy services can be achieved through fostering trust and launching public awareness initiatives (Shakya et al., 2024).

Physician Awareness and Attitudes:

Physiotherapy awareness and recommendation are greatly impacted by the attitudes of physicians. Only over half of doctors trust physiotherapists to independently administer rehabilitation programs, and many have mixed or negative opinions about their roles and abilities (Al-Eisa et al., 2018). Physicians' knowledge gaps are heightened by their limited engagement with physiotherapists and their lack of formal education regarding physiotherapy throughout medical training. Research suggests focused educational initiatives to improve doctors' knowledge of physiotherapy and alter their attitudes (Al-Eisa et al., 2018).

2.6.2 Factors Influencing Utilization of Physiotherapy Services

Utilization of physiotherapy services is influenced by a variety of factors spanning from individual and family characteristics to health system and societal influences. These factors collectively shape access, referral, compliance, and sustained use of physiotherapy interventions.

Individual and Family Factors:

Utilisation is significantly impacted by awareness and knowledge of physiotherapy and the particular medical condition. Patients or parents are more likely to seek and stick with treatment if they comprehend the importance of rehabilitation and the advantages of physical therapy (Sinha and Sharma, 2016). Utilisation is strongly influenced by educational attainment, socioeconomic position (SES), and financial affordability; families with higher SES and educational attainment are more likely to use physiotherapy services on a regular basis because they can more easily get beyond logistical and financial obstacles (Sinha and Sharma, 2016). Children with diseases

like cerebral palsy who are detected earlier are more likely to be referred and exposed to physiotherapy, therefore age at diagnosis is also important (Sinha and Sharma, 2016).

Health System and Organizational Factors:

Utilisation is also influenced by hospital policies, availability, and accessibility. Access is impacted by geographic location, with rural residents frequently encountering more obstacles because of lack of services and distance (Sinha and Sharma, 2016). Furthermore, physiotherapy referrals and provision may be restricted by restrictive institutional policies or service circumstances (Al-Eisa et al., 2018). Service delivery and long-term use are hampered by resource limitations, such as a paucity of equipment and a dearth of physiotherapists (Shakya et al., 2024).

Social and Cultural Factors:

Health-seeking behavior is influenced by cultural expectations and attitudes. For instance, in India, even in cases where a full recovery is doubtful, the expectation of "normalcy" - the belief that rehabilitation will restore full function can paradoxically lead to an increase in the usage of physiotherapy (Sinha and Sharma, 2016). However, non-utilization or a delayed start to therapy are frequently the results of misinformation or denial regarding the problem. Service utilisation may be further deterred by the social stigma associated with disabilities (Shakya et al., 2024).

2.7 Summary of Empirical Literature on Awareness and Utilization of Physiotherapy Services in the Management of Musculoskeletal Pain

A brief summary of some previous studies on awareness and utilization of physiotherapy services in the management of pain in undergraduate students are provided to guide understanding of the present study (Table 1).

Table 1: Summary of Empirical Literature on Awareness and Utilization of Physiotherapy Services in the Management of Musculoskeletal Pain.

AUTHOR/ YEAR/ COUNTRY	TITLE	SAMPLE SIZE	AIM OF STUDY	TYPE OF STUDY	OUTCOME MEASURE	FINDINGS
Ahmad et al. (2021), Pakistan.	Awareness of Physical Therapy among Medical Doctors in Swabi.	145 Doctors.	To evaluate the level of awareness of physical therapy among doctors.	Cross-sectional study	Self-structured questionnaire	60% of the respondents were familiar with physiotherapy and its field.
Benjamin et al. (2012), India.	Knowledge and Perception of Physiotherapy by final year students of various health care professions.	1008 final year students of various health care professions in Dakshina Kannada.	To evaluate the perception of the physiotherapy profession and extent of knowledge of physiotherapy	Cross-sectional study	Self-administered Questionnaire.	53.1% of the respondents had a good perception of physiotherapy. Also, 88% of the respondents demonstrated lack

			services among final year students of various healthcare professions.			of knowledge of physiotherapy.
Devanshi et al. (2017), India.	Physiotherapy Awareness in Medical and Non-Medical Population: A Social Media Survey.	103 medical professionals and 153 non-medical professionals.	To evaluate the level of awareness of physiotherapy among medical professionals and the general population.	Social Media Survey	Self-administered questionnaire on Google Forms	90%+ healthcare professionals were aware of physiotherapy, 78% general public were aware; varied awareness of specialties; recognized role in lifestyle disorder management.
Dhairav et al. (2022), India.	Prevalence of Awareness of Physiotherapy	151 subjects	To investigate the level of awareness about	Cross-sectional study	Self-administered Questionnaire.	There is 100% awareness of the existence of

	Amongst Health Care Professionals in Surat City.		physiotherapy among healthcare professionals in Surat City.			physiotherapy among healthcare professionals in Surat City, but not of individual specialties like burns management, prescribing orthosis and community management.
Mangaraj et al. (2024), India.	Community Survey of Awareness about the Knowledge of Physiotherapy Services amongst Health Care Profession Students.	249 final year students and post graduate students of health care professions.	To evaluate the extent of knowledge and current level of awareness of medical students about physiotherapy services.	Cross-sectional survey.	Structured Questionnaire.	63% had good awareness, 61% had good knowledge; MBBS and BDS students are more aware; knowledge gaps remain, particularly about specializations in

						physiotherapy.
Maruf et al. (2012), Nigeria	Awareness, Belief, Attitude and Utilization of Physiotherapy Services in a Nigerian Population.	885 adult residents of Nnewi, Nigeria.	To examine awareness, attitude, belief, and utilization of physiotherapy services among a Nigerian suburban population.	Cross-sectional survey.	Questionnaire assessing familiarity, awareness, belief, and utilization of physiotherapy.	66% were familiar with physiotherapy; 61.8% aware of its existence; most knew physiotherapists work in hospitals, treating muscle weakness, fractures, movement issues; few knew pediatric treatment was included; main sources of info were hospitals, media, schools; lack of direct

						physiotherapist communication noted; responsibility for awareness placed on government, hospitals, physiotherapists, and media.
Mbada et al. (2019), Nigeria.	Characteristics and determinants of community physiotherapy utilization and supply.	336 respondents from three selected communities in Nigeria.	To examine the characteristics and associations of utilization and supply of community Physiotherapy in Nigeria.	Cross-sectional Survey.	Self-developed validated three-section questionnaire which sought information on socio-demographics, utilization and supply of community	Utilization and supply of Physiotherapy services in Nigerian rural community was low. Low utilization of Physiotherapy services in Nigerian rural communities

					physiotherapy.	were most significantly influenced by low educational status and beliefs about pain.
Paul et al. (2015).	Review of Physiotherapy Awareness across the Globe.	Global population data from various studies.	To review physiotherapy awareness levels globally.	Literature review.	Data sources were used such as EBSCOHOST, Cochrane reviews, PEDro database, Medline, EMBASE database and Google scholar	Awareness ranged 11%-68%; higher in high HDI countries; hospitals/media key info sources; utilization less studied.
Priti et al. (2017), India.	Awareness of physiotherapy among general practitioners: A pilot study	150 subjects chosen randomly	To know about the interest and acceptance of physiotherapy and also to determine	Questionnaire- based pilot study	Questionnaire-based interview format.	Full awareness of physiotherapy; most familiar with orthopedic (36%) and neurological

			the awareness among general practitioners.			(24%) fields; less aware of community rehab (6%)

CHAPTER THREE

METHODS

3.1 Participants

This study comprised of undergraduate students of Basic Medical Sciences in the University of Benin.

3.1.1 Inclusion Criteria

The Inclusion Criteria included:

i. Basic Medical Students in the University of Benin.

ii. Students who have experienced any musculoskeletal pain within the last six months.

iii. Students who gave informed consent to participate.

3.1.2 Exclusion Criteria

The Exclusion Criteria excluded:

i. Students without any history of musculoskeletal pain

ii. Unwilling Students

iii. Students in their first year of Studies.

iv. Physiotherapy Students.

3.2 Materials

3.2.1 List of Instruments

Awareness and Utilization questionnaire.

3.2.2 Description of Instrument

The questionnaire was designed to assess: Awareness, Belief, Attitude and Utilization of Physiotherapy Services in a Nigerian Population (Maruf et al., 2012). The questionnaire had

three (3) sections: Section One (1) contained sociodemographic parameters that included- Age, Gender, Course of Study, Level of Study. Section Two (2) contained awareness of physiotherapy services in the management of pain among basic medical students in the University of Benin. Section Three (3) contained utilization of physiotherapy services in the management of pain among basic medical students in the University of Benin.

The questionnaire was adapted to suit the study. Two (2) sections, namely; Belief and Attitude were excluded from the original questionnaire (Maruf et al., 2012). The questionnaire was validated in the study done by Maruf et al. (2012).

3.3 Methods

3.3.1 Research Design

The study adopted a descriptive cross-sectional survey design.

3.3.2 Sampling Technique

The study employed stratified random sampling technique to ensure fair representation from all departments. Each department within the faculty represented a distinct stratum. From these strata, a selection of departments was randomly chosen using simple random sampling techniques, ensuring that each department has an equal chance of being included in the study. Once the departments were selected, students within those departments were then surveyed. This approach helped ensure that the sample captured the variability across the departments while maintain randomness in selection. It also improved the representativeness of the data by allowing for comparisons between departments, which may differ in exposure to or utilization of physiotherapy.

3.3.3 Sample Size

The Sample Size was calculated using the Yamane's formula; Yamane, T. (1967):

$$n = \frac{N}{1+N(e)^2}$$

Where:

- n = sample size
- N = population size
- e = margin of error (commonly 0.05 for 95% confidence level)

Given:

- N = 2100
- e = 0.05

Final Answer; n = 336 (rounded up to the nearest whole number)

3.3.4 Ethical Considerations

Ethical approval (CMS/REC/2024/818) for this study was obtained from the Ethics Research Committee of College of Medical Sciences, University of Benin, Benin City. Participation was entirely voluntary, and informed consent was obtained from each participant. All responses were kept anonymous and confidential. Participants were also informed that they could withdraw from the study at any point without facing any consequences.

3.3.5 Procedure for Data Collection

After securing ethical approval and consent from participants, the questionnaires were distributed physically, both in classes and in hostels. Participants were given clear instructions and some minutes to complete the form. Questionnaires were collected on the spot to maximize the response rate.

3.3.6 Data Analysis

The data was analyzed using the Statistical Package for the Social Sciences (SPSS), version 27.

Descriptive statistics like mean, standard deviation, frequencies and percentages were used to summarize the data. Associations between variables were examined using the Chi-square test. The significance level for the analysis was set at $p < 0.05$.

CHAPTER FOUR

RESULTS

4.1.1 Socio-demographic Characteristics of Respondents

The mean age of all respondents was 20.25±2.03 years (Table 2). The gender distribution was skewed towards females, who made up n=252 (75.0%) of the sample, while males accounted for n=84 (25.0%). Respondents were equally distributed across the four courses of study (Nursing, Medical Biochemistry, Medical Laboratory Science, and Radiography), with each course representing n=84 (25.0%) of the sample (Table 2). The largest group of students was from the 200 level, constituting n=123 (36.6%) of the participants (Table 2).

Table 2: Socio-demographic Characteristics of all Respondents (N=336)

Variables	Values	
Age (years)	**Mean ± SD** 20.25 ± 2.03	
	Frequency (n)	**Percentage (%)**
Sex		
Male	84	25.0
Female	252	75.0
Course of Study		
Nursing	84	25.0
Medical Biochemistry	84	25.0
Medical Laboratory Science	84	25.0
Radiography	84	25.0
Level of Study		
200 level	123	36.6
300 level	69	20.5
400 level	81	24.1
500 level	63	18.8

4.1.2 Respondents' Awareness of Physiotherapy Services

Table 3 summarizes the respondents' awareness of physiotherapy services. All respondents (100%) were familiar with the term "physiotherapy". However, specific awareness of service availability at the University of Benin Health Centre was low, with only n=57 (17.0%) affirming knowledge (Table 3a). The primary source of information was academic settings ('Schools'), as cited by n=137 (40.8%) (Table 3a). A majority (57.1%) correctly identified that physiotherapists 'Treat Patients' (Table 3a) and an overwhelming 86.0% felt they needed more information on the subject (Table 3b).

Table 3a: Respondents' Awareness of Physiotherapy Services

Variable	Response	Frequency (n)	Percentage (%)
Are you familiar with the word physiotherapy?	Yes	336	100.0
	No	0	0.0
Are you aware of the existence of physiotherapy services in UBHC?	Yes	57	17.0
	No	279	83.0
From where did you get the information about physiotherapy?	Schools	137	40.8
	Physiotherapists	87	25.9
	Media	58	17.3
	Other health personnel	24	7.1
	Doctor	20	6.0
	Others	8	2.4
	Pharmacist	2	0.6
Do you know what physiotherapists do?	Treat Patients	192	57.1
	Work in Fitness Centers	91	27.1
	Work in Sports Centers	34	10.1
	Do not know	19	5.7

KEY: UBHC = University of Benin Health Center

Table 3b: Respondents' Awareness of Physiotherapy Services

Variable	Response	Frequency (n)	Percentage (%)
Do you think you need to know more about physiotherapy services?	Yes	288	86.0
	No	47	14.0
Means of obtaining the services of a physiotherapist?	By a doctor's referral	137	40.8
	By going to a hospital	93	27.7
	Don't know	78	23.2
	By recommendation from someone	25	7.4
	Others	3	0.9
Where do physiotherapists work?	Hospitals	243	72.3
	Sports centers	52	15.5
	Fitness centers	24	7.1
	Others	17	5.1

KEY: UBHC = University of Benin Health Center

4.1.3 Respondents' Utilization of Physiotherapy Services

The findings on the utilization of physiotherapy services are presented in Table 4. A minority of students, n=110 (32.7%), reported that they or a relation had previously been treated by a physiotherapist, most commonly for knee pain (10.7%) or low back pain (9.8%) (Table 4a). Of those with experience, the vast majority (93.1%) actively sought the services (Table 4a). The attitude towards the profession was highly positive, with n=328 (97.6%) stating they would recommend physiotherapy to others(Table 4a). 'Ignorance' (51.5%) was the most cited reason for preferring other healthcare services (Table 4b). A majority (73.5%) knew how to obtain physiotherapy if needed (Table 4b).

Table 4a: Respondents' Utilization of Physiotherapy Services

Variable	Response	Frequency (n)	Percentage (%)
Have you or a relation been treated by a physiotherapist for musculoskeletal pain?	Yes	110	32.7
	No	226	67.3
Type of pain treated by a physiotherapist	Knee Pain	36	10.7
	Low Back Pain	33	9.8
	Shoulder Pain	32	9.5
	Neck Pain	28	8.3
	Osteoarthritis	27	8.0
	Ankle Pain	19	5.7
	Elbow Pain	19	5.7
If yes, did you or they seek PT services?	Yes	108	93.1
	No	8	6.9
Would you recommend PT to others?	Yes	328	97.6
	No	8	2.4
Would you prefer other services over PT?	No	255	75.9
	Yes	81	24.1

KEY: PT = Physiotherapy

Table 4b: Respondents' Utilization of Physiotherapy Services

Variable	Response	Frequency (n)	Percentage (%)
If no, would you discourage individuals who do that?	Yes	207	81.2
	No	48	18.8
Factors for preferring other services	Ignorance	173	51.5
	Cost	94	28.0
	Service Effectiveness	37	11.0
	Location	29	8.6
	Others	3	0.9
Is PT preferable (cost & effectiveness)?	Yes	193	57.4
	No	143	42.6
Do you know how to get a physiotherapist's services if you need them?	Yes	247	73.5
	No	89	26.5

KEY: PT = Physiotherapy.

4.1.4 Association between Respondents' Awareness and Gender

Table 5 shows the association between gender and awareness of physiotherapy. A statistically significant relationship was found between gender and knowledge of what physiotherapists do (χ^2=9.826, p=0.020) (Table 5a). A higher proportion of females (79.7%) than males (20.3%) associated physiotherapists with treating patients. No other significant associations were found between gender and the other awareness variables (p > 0.05), (Table 5).

Table 5a: Association between Gender and Respondents' Awareness of Physiotherapy

Variable	Responses	Gender		X^2	P
		Male n (%)	Female n (%)		
Are you familiar with the word physiotherapy?	Yes	84 (25.0)	252 (75.0)	-	-
	No	0 (0.0)	0 (0.0)		
Are you aware of the existence of physiotherapy services in the UBHC?	Yes	16 (28.1)	41 (71.9)	0.34	0.557
	No	68 (24.4)	211 (75.6)		
From where did you get the information about physiotherapy?	Doctor	7 (35.0)	13 (65.0)	11.00	0.088
	Pharmacist	0 (0.0)	2 (100.0)		
	Other health personnel	8 (33.3)	16 (66.7)		
	Media	19 (32.8)	39 (67.2)		
	Physiotherapists	12 (13.8)	75 (86.2)		
	Schools	35 (25.5)	102 (74.5)		
	Others	3 (37.5)	5 (62.5)		
Do you know what physiotherapists do?	Treat Patients	39 (20.3)	153 (79.7)	9.82	0.020*
	Fitness Centers	33 (36.3)	58 (63.7)		
	Sports Centers	6 (17.6)	28 (82.4)		
	Do not know	6 (31.6)	13 (68.4)		

KEY: UBHC = University of Benin Health Center.

Table 5b: Association between Gender and Respondents' Awareness of Physiotherapy

Variable	Responses	Gender		X^2	P
		Male n (%)	Female n (%)		
Do you think you need to know more about physiotherapy services?	Yes	75 (26.0)	213 (74.0)	1.02	0.312
	No	9 (19.1)	38 (80.9)		
Means of obtaining the services of a physiotherapist if you need them?	By recommendation	5 (20.0)	20 (80.0)	4.39	0.355
	By a doctor's referral	29 (21.2)	108 (78.8)		
	By going to a hospital	27 (29.0)	66 (71.0)		
	Others	0 (0.0)	3 (100.0)		
	Don't know	23 (29.5)	55 (70.5)		
Where do physiotherapists work?	Hospitals	63 (25.9)	180 (74.1)	12.53	0.136
	Sports centers	11 (21.2)	41 (78.8)		
	Schools	1 (33.3)	2 (66.7)		
	Fitness centers	6 (25.0)	18 (75.0)		
	Others	3 (17.6)	14 (82.4)		

KEY: UBHC = University of Benin Health Center.

4.1.5 Association between Level of Study and Respondents' Awareness of Physiotherapy.

The association between level of study and awareness is presented in Table 6. A statistically significant relationship was found regarding the source of information about physiotherapy (χ^2=37.795, p=0.043). Students in the 200 level were more likely to have heard about physiotherapy from the media (48.3%) (Table 6a), while information from physiotherapists was more evenly distributed among higher levels. No other significant associations were observed (p > 0.05), (Table 6).

Table 6a: Association between Level of Study and Respondents' Awareness of Physiotherapy

Variable	Responses	200L n (%)	300L n (%)	400L n (%)	500L n (%)	Other n (%)	χ^2	p
Are you familiar with the word physiotherapy?	Yes	123 (36.6)	69 (20.5)	81 (24.1)	61 (18.2)	2 (0.6)	-	-
	No	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)		
Aware of physiotherapy services in UBHC?	Yes	14 (24.6)	14 (24.6)	18 (31.6)	11 (19.3)	0 (0.0)	3.63	0.458
	No	109 (39.1)	55 (19.7)	63 (22.6)	50 (17.9)	2 (0.7)		
Source of information about physiotherapy?	Doctor	5 (25.0)	4 (20.0)	7 (35.0)	4 (20.0)	0 (0.0)	37.79	0.043*
	Pharmacist	2 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)		
	Others	8 (33.3)	5 (20.8)	5 (20.8)	6 (25.0)	0 (0.0)		
	Media	28 (48.3)	10 (17.2)	11 (19.0)	9 (15.5)	0 (0.0)		
	Physio	21 (24.1)	22 (25.3)	21 (24.1)	23 (26.4)	0 (0.0)		
	Schools	56 (40.9)	27 (19.7)	35 (25.5)	19 (13.9)	0 (0.0)		
	Others	3 (37.5)	1 (12.5)	2 (25.0)	0 (0.0)	2 (25.0)		
Do you know what physiotherapists do?	Treat Patients	66 (34.4)	42 (21.9)	51 (26.6)	33 (17.2)	0 (0.0)	15.65	0.269
	Work in Fitness Centers	38 (41.8)	18 (19.8)	20 (22.0)	13 (14.3)	2 (2.2)		
	Work in Sports Centers	10 (29.4)	6 (17.6)	7 (20.6)	11 (32.4)	0 (0.0)		
	Do not know	9 (47.4)	3 (15.8)	3 (15.8)	4 (21.1)	0 (0.0)		

KEY: UBHC = University of Benin Health Center.

Table 6b: Association between Level of Study and Respondents' Awareness of Physiotherapy

Variable	Responses	200L n (%)	300L n (%)	400L n (%)	500L n (%)	Other n (%)	χ^2	p
Need to know more about physiotherapy?	Yes	107 (37.2)	59 (20.5)	68 (23.6)	52 (18.1)	2 (0.7)	0.518	0.990
	No	16 (34.0)	10 (21.3)	13 (27.7)	9 (19.1)	0 (0.0)		
Means of obtaining the services of a physiotherapist?	Recommendation	11 (44.0)	6 (24.0)	5 (20.0)	3 (12.0)	0 (0.0)	16.51	0.349
	Doctor's referral	41 (29.9)	30 (21.9)	38 (27.7)	28 (20.4)	0 (0.0)		
	Going to a hospital	38 (40.9)	14 (15.1)	21 (22.6)	18 (19.4)	2 (2.2)		
	Others	0 (0.0)	1 (33.3)	1 (33.3)	1 (33.3)	0 (0.0)		
	Don't know	33 (42.3)	18 (23.1)	16 (20.5)	11 (14.1)	0 (0.0)		
Where do physiotherapists work?	Hospitals	87 (35.8)	49 (20.2)	59 (24.3)	46 (18.9)	2 (0.8)	19.38	0.497
	Sports centers	20 (38.5)	14 (26.9)	11 (21.2)	7 (13.5)	0 (0.0)		
	Schools	2 (66.7)	1 (33.3)	0 (0.0)	0 (0.0)	0 (0.0)		
	Fitness centers	11 (45.8)	2 (8.3)	8 (33.3)	3 (12.5)	0 (0.0)		
	Others	3 (17.6)	3 (17.6)	3 (17.6)	5 (29.4)	2 (11.8)		

KEY: UBHC = University of Benin Health Center.

4.1.6 Association between Course of Study and Respondents' Awareness of Physiotherapy.

Table 7 displays the association between the respondents' course of study and their awareness of physiotherapy. The analysis revealed no statistically significant associations between the course of study and any of the awareness variables ($p > 0.05$), (Table 7).

Table 7a: Association between Course of Study and Respondents' Awareness of Physiotherapy

Variable	Responses	NRS n (%)	MBC n (%)	MLS n (%)	RAD n (%)	X^2	P
Are you familiar with the word physiotherapy?	Yes	84 (25.0)	84 (25.0)	84 (25.0)	84 (25.0)	-	-
	No	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)		
Aware of the existence of physiotherapy services in UBHC?	Yes	14 (24.6)	15 (26.3)	15 (26.3)	13 (22.8)	0.22	0.974
	No	70 (25.1)	69 (24.7)	69 (24.7)	71 (25.4)		
From where did you get the information about physiotherapy?	Doctor	5 (25.0)	5 (25.0)	3 (15.0)	7 (35.0)	22.08	0.280
	Pharmacist	1 (50.0)	1 (50.0)	0 (0.0)	0 (0.0)		
	Other health personnel	6 (25.0)	5 (20.8)	7 (29.2)	6 (25.0)		
	Media	16 (27.6)	12 (20.7)	15 (25.9)	15 (25.9)		
	Physiotherapists	18 (20.7)	23 (26.4)	24 (27.6)	22 (25.3)		
	Schools	37 (27.0)	34 (24.8)	33 (24.1)	33 (24.1)		
	Others	1 (12.5)	4 (50.0)	2 (25.0)	1 (12.5)		
Do you know what physiotherapists do?	Treat Patients	48 (25.0)	47 (24.5)	45 (23.4)	52 (27.1)	2.68	0.848
	Work in Fitness	21 (23.1)	23 (25.3)	25 (27.5)	22 (24.2)		
	Work in Sports	10 (29.4)	8 (23.5)	9 (26.5)	7 (20.6)		
	Do not know	5 (26.3)	6 (31.6)	5 (26.3)	3 (15.8)		

KEY: UBHC: University of Benin Health Center.

Table 7b: Association between Course of Study and Respondents' Awareness of Physiotherapy

Variable	Responses	NRS n (%)	MBC n (%)	MLS n (%)	RAD n (%)	X^2	P
Need to know more about physiotherapy services?	Yes	72 (25.0)	71 (24.7)	72 (25.0)	73 (25.3)	0.08	0.994
	No	12 (25.5)	12 (25.5)	12 (25.5)	11 (23.4)		
Means of obtaining the services of a physiotherapist?	Recommendation	5 (20.0)	9 (36.0)	7 (28.0)	4 (16.0)	22.00	0.143
	Doctor's referral	42 (30.7)	34 (24.8)	26 (19.0)	35 (25.5)		
	Hospital visit	36 (38.7)	19 (20.4)	22 (23.7)	16 (17.2)		
	Others	0 (0.0)	1 (33.3)	1 (33.3)	1 (33.3)		
	Don't know	1 (1.3)	21 (26.9)	28 (35.9)	28 (35.9)		
Where do physiotherapists work?	Hospitals	59 (24.3)	63 (25.9)	61 (25.1)	60 (24.7)	14.15	0.51
	Sports centers	15 (28.8)	10 (19.2)	12 (23.1)	15 (28.8)		
	Schools	1 (33.3)	0 (0.0)	1 (33.3)	1 (33.3)		
	Fitness centers	7 (29.2)	4 (16.7)	5 (20.8)	8 (33.3)		
	Others	2 (11.8)	7 (41.2)	5 (29.4)	3 (17.6)		

KEY: NRS = Nursing, MBC = Medical Biochemistry, MLS = Med Lab Science, RAD = Radiography, UBHC = University of Benin Health Center.

4.1.7 Association between Gender and Respondents' Utilization of Physiotherapy Services.

Table 8 details the association between gender and the utilization of physiotherapy services. The analysis found no statistically significant relationship between gender and any of the nine utilization variables, including personal or relational experience with physiotherapy, willingness to recommend services, or preference for physiotherapy over other services ($p > 0.05$ for all), (Table 8).

Table 8a: Association between Gender and Respondents' Utilization of Physiotherapy Services

Variable	Responses	Male n (%)	Female n (%)	χ^2	p
Have you or a relation been treated by a Physiotherapist?	Yes	24 (21.8)	86 (78.2)	1.26	0.532
	No	60 (26.5)	165 (73.0)		
Type of pain treated	Shoulder Pain	11 (34.4)	21 (65.6)	3.38	0.847
	Neck Pain	6 (21.4)	22 (78.6)		
	Low Back Pain	6 (18.2)	27 (81.8)		
	Other	20 (26.3)	56 (73.7)		
If yes, did you seek the services?	Yes	25 (23.1)	83 (76.9)	0.29	0.863
	No	2 (25.0)	6 (75.0)		
Would you recommend PT to others?	Yes	82 (25.0)	246 (75.0)	3.42	0.180
	No	1 (12.5)	7 (87.5)		

KEY: PT = Physiotherapy

Table 8b: Association between Gender and Respondents' Utilization of Physiotherapy Services

Variable	Responses	Male n (%)	Female n (%)	χ^2	p
Would prefer other services over PT?	Yes	23 (28.4)	58 (71.6)	0.65	0.418
	No	61 (23.9)	194 (76.1)		
If no, would you discourage others?	Yes	32 (22.5)	110 (77.5)	0.91	0.633
	No	48 (26.5)	133 (73.5)		
Factors for preferring other services	Ignorance	39 (22.5)	134 (77.5)	5.99	0.200
	Cost	29 (30.9)	65 (69.1)		
	Other	16 (20.3)	63 (79.7)		
Is PT preferable (cost & effectiveness)?	Yes	47 (24.3)	146 (75.7)	0.10	0.750
	No	37 (25.9)	106 (74.1)		
Do you know how to obtain PT services?	Yes	61 (23.1)	203 (76.9)	2.35	0.125
	No	23 (31.9)	49 (68.1)		

KEY: PT = Physiotherapy.

4.1.8 Association between Level of Study and Respondents' Utilization of Physiotherapy Services.

The association between the respondents' level of study and their utilization of physiotherapy services is presented in Table 9. A statistically significant relationship was found between level of study and the type of pain treated by a physiotherapist (χ^2=27.755, p=0.007) (Table 9a). No other statistically significant relationships were found (p > 0.05), (Table 9).

Table 9a: Association between Level of Study and Respondents' Utilization of Physiotherapy Services

Variable	Responses	200L n (%)	300L n (%)	400L n (%)	500L n (%)	Other n (%)	X^2	P
Have you or a relation been treated by a PT?	Yes	48 (43.6)	20 (18.2)	24 (21.8)	18 (16.4)	0 (0.0)	6.20	0.625
	No	74 (32.7)	49 (21.7)	57 (25.2)	43 (19.0)	2 (0.9)		
Type of pain treated	Shoulder Pain	14 (43.8)	4 (12.5)	10 (31.3)	4 (12.5)	0 (0.0)	27.75	0.007*
	Neck Pain	15 (53.6)	5 (17.9)	5 (17.9)	3 (10.7)	0 (0.0)		
	Low Back Pain	13 (39.4)	5 (15.2)	8 (24.2)	7 (21.2)	0 (0.0)		
	Other	58 (40.8)	25 (17.6)	21 (14.8)	22 (15.5)	16 (11.3)		
If yes, did you seek the services?	Yes	44 (40.7)	20 (18.5)	26 (24.1)	18 (16.7)	0 (0.0)	6.11	0.634
	No	5 (62.5)	0 (0.0)	2 (25.0)	1 (12.5)	0 (0.0)		
Would you recommend PT to others?	Yes	121 (36.9)	69 (21.0)	78 (23.8)	58 (17.7)	2 (0.6)	7.26	0.508
	No	2 (25.0)	0 (0.0)	3 (37.5)	3 (37.5)	0 (0.0)		

Table 9b: Association between Level of Study and Respondents' Utilization of Physiotherapy Services

Variable	Responses	200L n (%)	300L n (%)	400L n (%)	500L n (%)	Other n (%)	X^2	P
Would you prefer other services over PT?	Yes	29 (35.8)	12 (14.8)	26 (32.1)	14 (17.3)	0 (0.0)	5.22	0.265
	No	94 (36.9)	57 (22.4)	55 (21.6)	47 (18.4)	2 (0.8)		
If no, would you discourage others?	Yes	48 (33.8)	28 (19.7)	36 (25.4)	28 (19.7)	2 (1.4)	8.17	0.417
	No	71 (39.2)	39 (21.5)	43 (23.8)	28 (15.5)	0 (0.0)		
Factors for preferring other services	Ignorance	60 (34.7)	38 (22.0)	42 (24.3)	32 (18.5)	1 (0.6)	16.75	0.40
	Cost	34 (36.2)	20 (21.3)	24 (25.5)	15 (16.0)	1 (1.1)		
	Other	29 (35.4)	11 (13.4)	15 (18.3)	14 (17.1)	3 (3.7)		
Is PT preferable (cost & effectiveness)?	Yes	72 (37.3)	39 (20.2)	43 (22.3)	37 (19.2)	2 (1.0)	2.45	0.653
	No	51 (35.7)	30 (21.0)	38 (26.6)	24 (16.8)	0 (0.0)		
Do you know how to obtain PT services?	Yes	94 (35.7)	49 (18.6)	65 (24.7)	54 (20.5)	2 (0.8)	6.94	0.139
	No	29 (32.6)	20 (22.5)	16 (18.0)	7 (7.9)	0 (0.0)		

4.1.9 Association between Respondents' Utilization and Course of Study

Table 10 outlines the association between course of study and utilization of physiotherapy. The results of the chi-square analysis indicate that there is a statistically significant relationship between the course of study and the factors cited for preferring other services (χ^2=28.288, p=0.005) (Table 10b). Radiography students were more likely to cite ignorance (31.2%) compared to other departments. No other significant relationships were found between the students' specific course of study and the other utilization variables ($p > 0.05$), (Table 10).

Table 10a: Association between Respondents' Utilization of Physiotherapy and Course of Study

Variable	Responses	NRS n (%)	MBC n (%)	MLS n (%)	RAD n (%)	X^2	P
Have you or a relation been treated by a PT?	Yes	27 (24.5)	30 (27.3)	31 (28.2)	22 (20.0)	5.79	0.447
	No	57 (25.2)	54 (23.9)	52 (23.0)	62 (27.4)		
Type of pain treated	Shoulder Pain	4 (12.5)	13 (40.6)	9 (28.1)	6 (18.8)	21.53	0.427
	Neck Pain	6 (21.4)	6 (21.4)	10 (35.7)	6 (21.4)		
	Low Back Pain	10 (30.3)	8 (24.2)	5 (15.2)	10 (30.3)		
	Other	54 (38.0)	27 (19.0)	28 (19.7)	33 (23.2)		
If yes, did you seek the services?	Yes	25 (23.1)	28 (25.9)	32 (29.6)	23 (21.3)	4.54	0.604
	No	3 (37.5)	3 (37.5)	1 (12.5)	1 (12.5)		
Would you recommend PT to others?	Yes	81 (24.7)	83 (25.3)	83 (25.3)	81 (24.7)	4.62	0.593
	No	3 (37.5)	1 (12.5)	1 (12.5)	3 (37.5)		

KEY: NRS = Nursing, MBC = Medical Biochemistry, MLS = Med Lab Science, RAD = Radiography, PT = Physiotherapy.

Table 10b: Association between Respondents' Utilization of Physiotherapy and Course of Study

Variable	Responses	NRS n (%)	MBC n (%)	MLS n (%)	RAD n (%)	X^2	P
Would prefer other services over PT?	Yes	17 (21.0)	16 (19.8)	27 (33.3)	21 (25.9)	4.86	0.182
	No	67 (26.3)	68 (26.7)	57 (22.4)	63 (24.7)		
If no, would you discourage others?	Yes	38 (26.8)	41 (28.9)	28 (19.7)	35 (24.6)	17.94	0.006
	No	46 (25.4)	42 (23.2)	47 (26.0)	46 (25.4)		
Factors for preferring other services	Ignorance	27 (15.6)	49 (28.3)	43 (24.9)	54 (31.2)	28.28	0.005*
	Cost	33 (35.1)	20 (21.3)	24 (25.5)	17 (18.1)		
	Other	24 (30.0)	15 (18.8)	17 (21.3)	24 (30.0)		
Is PT preferable (cost & effectiveness)?	Yes	48 (24.9)	49 (25.4)	45 (23.3)	51 (26.4)	0.91	0.822
	No	36 (25.2)	35 (24.5)	39 (27.3)	33 (23.1)		
Do you know how to obtain PT services?	Yes	68 (25.8)	62 (23.5)	66 (25.0)	68 (25.8)	1.69	0.638
	No	16 (18.0)	22 (24.7)	18 (20.2)	16 (18.0)		

KEY: NRS = Nursing, MBC = Medical Biochemistry, MLS = Med Lab Science, RAD = Radiography, PT = Physiotherapy.

4.1.10 Association between Respondents' Awareness and Utilization of Physiotherapy Services

There was a significant association between the source of information about physiotherapy (A3) and the factors cited for preferring other services (U7) ($p<0.001$). A significant association was also found between knowledge of what physiotherapists do (A4) and both the preference for other services over physiotherapy (U5) ($p=0.010$) and the knowledge of how to obtain physiotherapy services (U9) ($p<0.001$). The perceived need for more information on physiotherapy (A5) was significantly associated with having a personal or relational history of treatment (U1) ($p=0.044$) and with the factors for preferring other services (U7) ($p=0.015$). Furthermore, a significant association was found between the respondents' knowledge of how to access physiotherapy (A6) and their confirmation that they know how to obtain these services (U9) ($p=0.007$). Finally, there was a significant association between knowledge of where physiotherapists work (A7) and knowing how to obtain their services (U9) ($p=0.001$). There was no significant association between other awareness and utilization items ($p >0.05$), (Table 11)

Table 11: Association between Respondents' Awareness and Utilization of Physiotherapy Services

Variable	A1 (X2, p)	A2 (X^2, p)	A3 (X^2, p)	A4 (X^2, p)	A5 (X^2, p)	A6 (X^2, p)	A7 (X^2, p)
U1	-	(0.21, 0.899)	(5.90, 0.921)	(3.94, 0.685)	(6.23, 0.044*)	(9.56, 0.297)	(9.56, 0.794)
U2	-	(3.41, 0.845)	(57.55, 0.055)	(25.98, 0.207)	(6.11, 0.527)	(24.14, 0.674)	(64.29, 0.070)
U3	-	(2.16, 0.339)	(9.75, 0.638)	(2.57, 0.861)	(0.02, 0.990)	(12.54, 0.129)	(10.93, 0.691)
U4	-	(3.59, 0.166)	(19.86, 0.070)	(4.09, 0.664)	(1.41, 0.494)	(5.42, 0.712)	(20.49, 0.115)
U5	-	(0.18, 0.669)	(10.98, 0.089)	(11.40, 0.010*)	(2.90, 0.089)	(2.45, 0.654)	(4.68, 0.699)
U6	-	(0.41, 0.816)	(7.40, 0.830)	(5.90, 0.435)	(2.22, 0.330)	(9.39, 0.311)	(15.60, 0.338)
U7	-	(6.70, 0.153)	(72.48, 0.000)	(13.29, 0.348)	(12.31, 0.015*)	(24.85, 0.073)	(27.44, 0.494)
U8	-	(0.65, 0.420)	(6.21, 0.400)	(3.37, 0.339)	(0.38, 0.541)	(5.38, 0.250)	(6.70, 0.461)
U9	-	(0.40, 0.527)	(4.57, 0.600)	(33.05, 0.000)	(0.12, 0.731)	(14.24, 0.007*)	(24.50, 0.001*)

KEY: Awareness: A1 - Are you familiar with the word physiotherapy? A2 - Are you aware of the existence of physiotherapy services in the University of Benin Health Center? A3 - From where did you get the information about Physiotherapy? A4 - Do you know what physiotherapists do? A5 - Do you think you need to know more about physiotherapy services? A6 - By which of the following do you know that you can obtain the services of a physiotherapist if you need them? A7 - Where do physiotherapists work? Utilization: U1 - Have you or any of your relations ever been treated by a physiotherapist for musculoskeletal pain? U2 - Have you or your relations ever suffered any of the following musculoskeletal pain treated by a physiotherapist? U3 - If yes, did you or they seek physiotherapy services? U4 - Would you recommend physiotherapy services to an individual who should seek them for musculoskeletal pain? U5 - If you have a condition that requires physiotherapy, would you prefer other health care services to physiotherapy for musculoskeletal pain? U6 - If "no", would you discourage individuals who do that? U7 - What do you think contributes to preference for other health care services by individuals? U8 - In terms of cost and effectiveness, are physiotherapy services preferable to other healthcare services? U9 - Do you know how you can obtain the services of a physiotherapist if you need them?

4.2 Hypotheses Testing

Hypothesis 1: There would be no significant association between awareness of physiotherapy services and their utilization among Basic Medical Students with musculoskeletal pain in the University of Benin.

Test: Chi-square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore **REJECTED**.

Hypothesis 2: There would be no significant association between age and level of awareness of physiotherapy services for musculoskeletal pain among Basic Medical Students in the University of Benin.

Test: Chi-square Test

P-value: 0.05

Observed p-value: >0.05

DECISION: The observed p-value is greater than 0.05; the null hypothesis is therefore **NOT REJECTED.**

Hypothesis 3: There would be no significant association between age and utilization of physiotherapy services for musculoskeletal pain among Basic Medical Students in the University of Benin.

Test: Chi-square Test

P-value: 0.05

Observed p-value: >0.05

DECISION: The observed p-value is greater than 0.05; the null hypothesis is therefore **NOT REJECTED.**

Hypothesis 4: There would be no significant association between gender and level of awareness of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

Test: Chi-square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore **REJECTED**.

Hypothesis 5: There would be no significant association between gender and utilization of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

Test: Chi-square Test

P-value: 0.05

Observed p-value: >0.05

DECISION: The observed p-value is greater than 0.05; the null hypothesis is therefore **NOT REJECTED.**

Hypothesis 6: There would be no significant association between the level of study and level of awareness of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

Test: Chi-square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore **REJECTED.**

Hypothesis 7: There would be no significant association between the level of study and

utilization of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

Test: Chi-square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore **REJECTED.**

Hypothesis 8: There would be no significant association between the course of study and level of awareness of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

Test: Chi-square Test

P-value: 0.05

Observed p-value: >0.05

DECISION: The observed p-value is greater than 0.05; the null hypothesis is therefore **NOT REJECTED.**

Hypothesis 9: There would be no significant association between the course of study and utilization of physiotherapy services among Basic Medical Students with musculoskeletal pain in the University of Benin.

Test: Chi-square Test

P-value: 0.05

Observed p-value: <0.05

DECISION: The observed p-value is less than 0.05; the null hypothesis is therefore **REJECTED.**

CHAPTER FIVE

DISCUSSION, CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS

5.1.1 Awareness of Physiotherapy Services

The finding of the study that all respondents answered "Yes" to the question, "Are you familiar with the word physiotherapy?" suggests universal name recognition of the profession within medical student in the faculty of Basic Medical Sciences. This was a positive baseline, implying that the profession has a solid identity within the academic medical community. This result agrees with a study among clinical students in Sri Lanka by Senarath et al. (2019), where all respondents were also aware of the physiotherapy profession. However, the familiarity rate in the present study was notably higher than the 66% reported by Maruf et al. (2012) among the general population in Nnewi, Nigeria, and was in contrast to findings from a rural Nigerian community by Igwesi-Chidobe (2012), where 85.2% of residents had never heard of physiotherapy. The discrepancy was likely due to the specialized educational environment of the respondents in the present study. As basic medical science students, they are routinely exposed to various medical terminologies as part of their curriculum, which would not be the case for general or rural populations.

In response to the question, "Are you aware of the existence of physiotherapy services in the University of Benin Health Center?", only a small fraction of students affirmed this. This is factually incorrect, as there are currently no physiotherapy services provided at the University of Benin Health Center. This finding indicates that some of the respondents may have misunderstood the question. This misperception reveals a significant disconnect between theoretical familiarity and real-life awareness of physiotherapy's institutional presence. It further underscores the lack of direct exposure that the students have to physiotherapy

practice within their immediate learning environment, which limits their comprehension of the profession's accessibility and scope.

The absence of physiotherapy services at the University of Benin Health Center likely contributes to this knowledge gap. Without an on-campus physiotherapy unit, students have no avenue to observe, experience, or seek physiotherapy services directly. This lack of visibility reduces opportunities for meaningful engagement with the discipline and fosters misconceptions regarding where and how physiotherapy can be obtained.

This outcome is consistent with the study done by Olaleye et al. (2023) on primary health care practitioners, where limited knowledge and awareness about physiotherapy was found, highlighting the need for interprofessional education and the integration of physiotherapy services into primary health care.

The finding that a majority of students responded "Yes" to the question, "Do you think you need to know more about physiotherapy services?" indicated a self-perceived knowledge deficit. This sentiment was corroborated by the findings of a study of Maruf et al. (2012), where 89.6% of respondents in a general Nigerian population also expressed a need for more information. Similarly, Senarath et al. (2019) found that a majority of clinical students (72.6%) perceived their own knowledge regarding physiotherapy to be inadequate. This widespread desire for more information, even among a medically-inclined students, underscores the inadequacy of current physiotherapy information channels, both academic and public. It suggests that the information students receive is either insufficient in depth or fails to cover the practical aspects they deem important for their future practice and personal health. It is important that the University of Benin Health Centre develop and implement targeted awareness campaigns for its physiotherapy services, detailing the conditions treated and the precise steps for accessing care.

5.1.2 Perception of the Role and Scope of Physiotherapy

The results from the present study showed that when asked, "Do you know what physiotherapists do?", a majority of respondents correctly identified the primary role as 'Treat Patients.' This suggested a basic understanding of the profession's function. However, a notable proportion held a narrower view, associating the profession primarily with working in fitness centers or work in sports centers, implying that their perception of the full scope of physiotherapy was limited. This finding is consistent with the results of a study by Varghese et al. (2012), who found that 75% of healthcare students during their study in India immediately thought of "exercise" when they heard the term physiotherapy. Likewise, Mangaraj et al. (2024) found that the highest awareness of a physiotherapy specialization among healthcare students was in sports physiotherapy (49%). This indicates that a stereotyped view of the profession, focused on musculoskeletal and sports domains, is prevalent across different student populations and geographical locations. The reasons for this narrow perception are likely due to a number of reason, stemming from media portrayals that often highlight physiotherapists working with athletes, combined with a medical curriculum that may place greater emphasis on the musculoskeletal aspects of physiotherapy. This is further compounded by the issue that general physicians often have inadequate training in musculoskeletal disorders, as noted by Alrwaily & Alanazi (2022), which could lead to referral patterns that reinforce this narrow perception. To foster a more holistic and accurate understanding, it is strongly recommended that the undergraduate medical curriculum incorporates inter-professional education (IPE) modules where the full breadth of the physiotherapy profession can be showcased and impacted.

5.1.3 Utilization of Physiotherapy Services for Musculoskeletal Pain

In response to the question, "Have you or any of your relations ever been treated by a physiotherapist for musculoskeletal pain?", a minority of students indicated they had. This

suggested a relatively low rate of personal or familial experience with physiotherapy services for musculoskeletal pain (MSP) within these students. This low utilization is significant when contrasted with the high prevalence of MSP found in similar student populations. For instance, Ogunlana et al. (2021) found a 12-month MSP prevalence of 89.7% among South African physiotherapy and occupational therapy students, with neck and low back pain being most common. This discrepancy suggests that many students experiencing MSP are not seeking physiotherapy care. The utilization rate in the present study was, however, remarkably consistent with findings from another Nigerian study by Maruf et al. (2012), which reported a utilization rate of 37.3%, possibly indicating a consistent pattern of health-seeking behavior in Nigeria.

The absence of an on-campus physiotherapy service represents a critical barrier to utilization. Students who experience pain or discomfort may seek informal solutions such as self-medication, rest, or advice from peers, instead of consulting a trained physiotherapist. Establishing physiotherapy services within the institution could provide students with readily accessible, evidence based treatment option for common musculoskeletal conditions.

Despite low personal utilization, the present study's findings showed a mostly positive attitude towards the profession, with a majority of respondents stating "Yes" when asked, "Would you recommend physiotherapy services to an individual who should seek them for musculoskeletal pain?". This indicated a high level of trust in the profession's value. This positive attitude agrees with the findings from a study by Maruf et al. (2012), who found that 70.5% of respondents would recommend physiotherapy. The higher rate in the current study could be attributed to the medical background of the participants, who may have a greater academic appreciation for the evidence-based nature of the profession.

The present study's results showed that when asked, "What do you think contributes to preference for other health care services by individuals?", the most cited factor was

'Ignorance'. This finding strongly suggests that the primary barrier preventing people from choosing physiotherapy is a lack of sufficient knowledge about its benefits, scope, and how to access it. This finding is corroborated by Maruf et al. (2012), who also identified 'Ignorance' as the most frequent reason (38.7%). The consistency across these studies conducted in Nigeria suggests that a lack of actionable information is a fundamental barrier to physiotherapy services utilization in Nigeria. The fact that 'Ignorance' was a more significant barrier than 'Cost' may reflect the nature of the university setting, where students might have access to more affordable healthcare. In such an environment, financial constraints become less of a limiting factor than simply not knowing when, why, or how to seek care.

5.1.4 Factors Associated with Awareness and Utilization

The present study identified a significant association between the students' level of study and their response to "From where did you get the information about Physiotherapy?", with junior students relying more on media and senior students gaining information directly from physiotherapists. This implied that knowledge sources evolve with increasing clinical exposure. Furthermore, a significant relationship was found between the course of study and the answers to "What do you think contributes to preference for other health care services by individuals?", with Radiography students more likely to cite 'ignorance' than their peers. This suggested that students' knowledge and health-seeking perceptions are shaped by their specific curriculum. The principle that knowledge improves with higher educational attainment is well-supported by the literature, with Mbada et al. (2019) finding it a significant predictor of physiotherapy utilization. The observed differences between courses of study are likely due to the varied nature of their training; a student in Radiography may have limited to no interaction with a physiotherapy department, whereas a nursing or medical student would have more frequent contact. This differential exposure naturally leads to a knowledge disparity regarding the roles and accessibility of allied health services, an issue compounded

by the global problem of insufficient musculoskeletal education in medical curricula (Alrwaily & Alanazi, 2022). To ensure a consistent and foundational understanding, it is recommended that the university introduce a standardized introductory module on the roles and scope of various allied health professions for all basic medical students early in their academic journey.

5.2 Conclusion

Students in the faculty of Basic Medical Sciences have a high level of name recognition for the physiotherapy profession. However, their awareness of physiotherapy services is low and largely superficial. This superficiality is influenced by students' level of study and their course of study. Students' level of study dictates their primary source of information, shifting from general media in early years to direct professional contact in later years, while their specific course of study creates disparities in knowledge, leaving those with less clinical exposure with greater perceived knowledge deficits. This results in a deficit in the awareness of physiotherapy services and a narrow perception of the full scope of the physiotherapy profession.

The mistaken belief by some respondents that physiotherapy services are available within the health center highlights a significant information gap and the absence of institutional physiotherapy representation. The lack of on-campus physiotherapy services not only restricts students' access to care but also contributes to misconceptions and underappreciation of the profession's scope

The utilization of physiotherapy services for musculoskeletal pain among these students is low. This underutilization is not influenced by a negative perception of the profession's effectiveness as the attitude towards recommending physiotherapy is positive. Instead, utilization is influenced by a knowledge deficit, with the primary barrier identified as 'Ignorance' about the specific benefits, the range of treatable conditions, and the correct

pathways to access care.

5.3 Recommendations

Establishment of Physiotherapy Services: The University of Benin Health Center should prioritize the establishment of a physiotherapy unit to provide evidence-based rehabilitation and preventive services for students and staff. The presence of a physiotherapy department would offer essential clinical support for managing musculoskeletal pain and injuries while also serving as a valuable educational platform for medical students.

Awareness and Education Campaigns: In the interim, before a physiotherapy unit is established, the University should organize awareness programs to educate students about physiotherapy's scope, benefits, and external referral pathways. These campaigns should use multiple platforms, orientation sessions, seminars, posters, newsletters, and digital communication to clarify what physiotherapy entails and where it can be accessed.

Curricular Integration and Inter-Professional Education: It is recommended that the Faculty of Basic Medical Sciences integrates a mandatory module on the roles and scope of allied health professions. This should include comprehensive presentations on physiotherapy that extend beyond musculoskeletal care to cover areas such as neurology, cardiopulmonary, and pediatrics. Fostering inter-professional education early in their training will address the core knowledge gap identified as 'ignorance' and equip future doctors with the understanding needed for appropriate referrals and effective team-based care.

Promotion of Student Musculoskeletal Health: Given the high prevalence of musculoskeletal pain in student populations and the low utilization of services found in this study, it is recommended that student health services actively promote physiotherapy as a primary resource for students' own well-being. Proactive initiatives, such as workshops on study ergonomics, postural health, and self-management strategies for common ailments like neck and back pain, should be implemented. These programs would not only improve

students' health but also normalize the act of seeking physiotherapy, thereby increasing utilization.

5.4 Implications for Further Study

Longitudinal Study: This study provided a snapshot of awareness and utilisation at a single point in time. A longitudinal study that tracks this cohort of basic medical students as they progress into their clinical years and subsequently into professional practice would be valuable. Such a study could determine how their perceptions, knowledge, and referral behaviours evolve with increased clinical exposure and professional responsibility, providing deeper insight into the long-term impact of their undergraduate education.

Qualitative Exploration of "Ignorance": While this study identified 'ignorance' as the primary barrier to utilisation, its quantitative nature could not explore the specific content of this knowledge gap. A qualitative study, employing focus group discussions or in-depth interviews, is recommended to delve into the specific misconceptions, questions, and informational needs of students. This would provide rich, nuanced data to inform the design of more effective and targeted educational and promotional materials.

Clinical and Outcome Measurement: When a physiotherapy unit is established, subsequent studies should measure its utilization, clinical outcomes, and overall impact on student health. Such evidence would validate the importance of integrating physiotherapy into academic health systems.

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APPENDIX A

INFORMED CONSENT FORM

Title of the Study: Awareness and Utilisation of Physiotherapy Services for Musculoskeletal Pain among Basic Medical Students in the University of Benin.

Investigator: Adeoye Olukemi Elizabeth

Contact Phone Number: 08071024901

Purpose of the Study: You are invited to take part in a research study aimed at assessing the level of awareness and extent of utilisation of physiotherapy services among basic medical students of the University of Benin who experience musculoskeletal pain. The information obtained will help improve physiotherapy service delivery, education, and access within the university community.

Participants:

As a basic medical student, you are eligible to participate in this study if you have experienced musculoskeletal pain (such as neck, back, shoulder, or joint pain) during your academic activities. You must be currently enrolled as a basic medical student at the University of Benin. Participation is entirely voluntary and you may withdraw at any time without any consequence.

Procedure:

You will be asked to complete a structured questionnaire designed to gather information about your knowledge of physiotherapy, sources of awareness, history of musculoskeletal pain, and whether or not you have used physiotherapy services. The estimated time to complete the questionnaire is 10-15 minutes.

Benefits of Participation:

Participation in this study will help promote greater understanding of physiotherapy services

among students and could influence policies aimed at improving access to care. You may also gain personal insight into your own musculoskeletal health and treatment options.

Risk of Participation:

There are no foreseeable risks or harm in participating in this study. The questionnaire does not involve any physical procedure and your responses will be confidential.

Cost/Compensation:

There is no cost to participate in the study, and you will not be compensated. Your participation is voluntary and based on your willingness to contribute to research.

Contact Information:

If you have any concerns about the study, please contact the investigator at the number provided above.

Voluntary Participation:

Your participation is completely voluntary. You may choose to withdraw at any point before or during the study without any penalties or loss of benefits to which you are otherwise entitled.

Confidentiality:

All information you provide will be kept strictly confidential. Data collected will be used solely for academic research and no identifying details will be disclosed or published.

Participant Consent:

Now that the study has been well explained to me and I fully understand the content of the study process, I am willing to take part in the study.

……..

Participant's Signature and Date

……..

Witness's Signature and Date

……..

Researcher's Signature and Date

APPENDIX B

QUESTIONNAIRE (ENGLISH VERSION)

SOCIO-DEMOGRAPHIC INFORMATION

Age: ……

Sex: Male [ ] Female [ ]

Course of Study: Nursing [ ] Physiotherapy [ ] Physiology [ ] Anatomy [ ]

Level of Study: 200 [ ] 300 [ ] 400 [ ] 500 [ ]

The following questions require you to provide information on your awareness, belief, attitude, and utilization of physiotherapy services. Please, your honest responses to these questions are required. Tick (√) against ANY perceived right option(s).

AWARENESS

1. Are you familiar with the word physiotherapy?

Yes [ ] No [ ]

2. Are you aware of the existence of physiotherapy services in the University of Benin Health Center?

Yes [ ] No [ ]

3. If "yes" to No.1, from where did you get the information about Physiotherapy?

Doctor [ ] Pharmacist [ ] Other health personnels [ ] Media [ ] Physiotherapists [ ] Schools [ ] Others (please specify)……..

4. Do you know what physiotherapists do?

Treat Patients [ ] Work in Fitness Centers [ ] Work in Sports Centers [ ] Do not know [ ]

5. Do you think you need to know more about physiotherapy services?

Yes [ ] No [ ]

6. By which of the following do you know that you can obtain the services of a

physiotherapist if you need them?

(a) By recommendation from someone [ ] (b) By a doctor's referral [ ]

(c) By going to a hospital [ ] (d) Others (specify)..... (e) Don't know [ ]

7. If you answer 'yes' to question 4 above, then where do physiotherapists work?

Hospitals [ ] Sports centres [ ] Schools [ ] Military setting [ ]

Maternity homes [ ] Fitness centres [ ] Residential homes [ ]

Primary health centres [ ] Others (specify) .....

UTILIZATION

1. Have you or any of your relations ever been treated by a physiotherapist for musculoskeletal pain?

Yes [ ] No [ ]

2. Have you or your relations ever suffered any of the following musculoskeletal pain treated by a physiotherapist?

Shoulder Pain [ ] Neck Pain [ ] Low Back Pain [ ] Elbow Pain [ ] Knee Pain [ ] Ankle Pain [ ] Osteoarthritis [ ]

3. If "yes" to No. 1, did you or they seek physiotherapy services?

Yes [ ] No [ ]

4. Would you recommend physiotherapy services to an individual who should seek them for musculoskeletal pain?

Yes. [ ] No [ ]

5. If you have a condition that requires physiotherapy, would you prefer other health care services to physiotherapy for musculoskeletal pain?

Yes [ ] No [ ]

6. If "no", would you discourage individuals who do that?

Yes [ ] No [ ]

7. What do you think contributes to preference for other health care services by individuals?

(a) Ignorance [ ] (b) Cost [ ] (c) Location [ ]

(d) Services effectiveness [ ] (e) Others (specify).....

8. In terms of cost and effectiveness, are physiotherapy services preferable to other healthcare services?

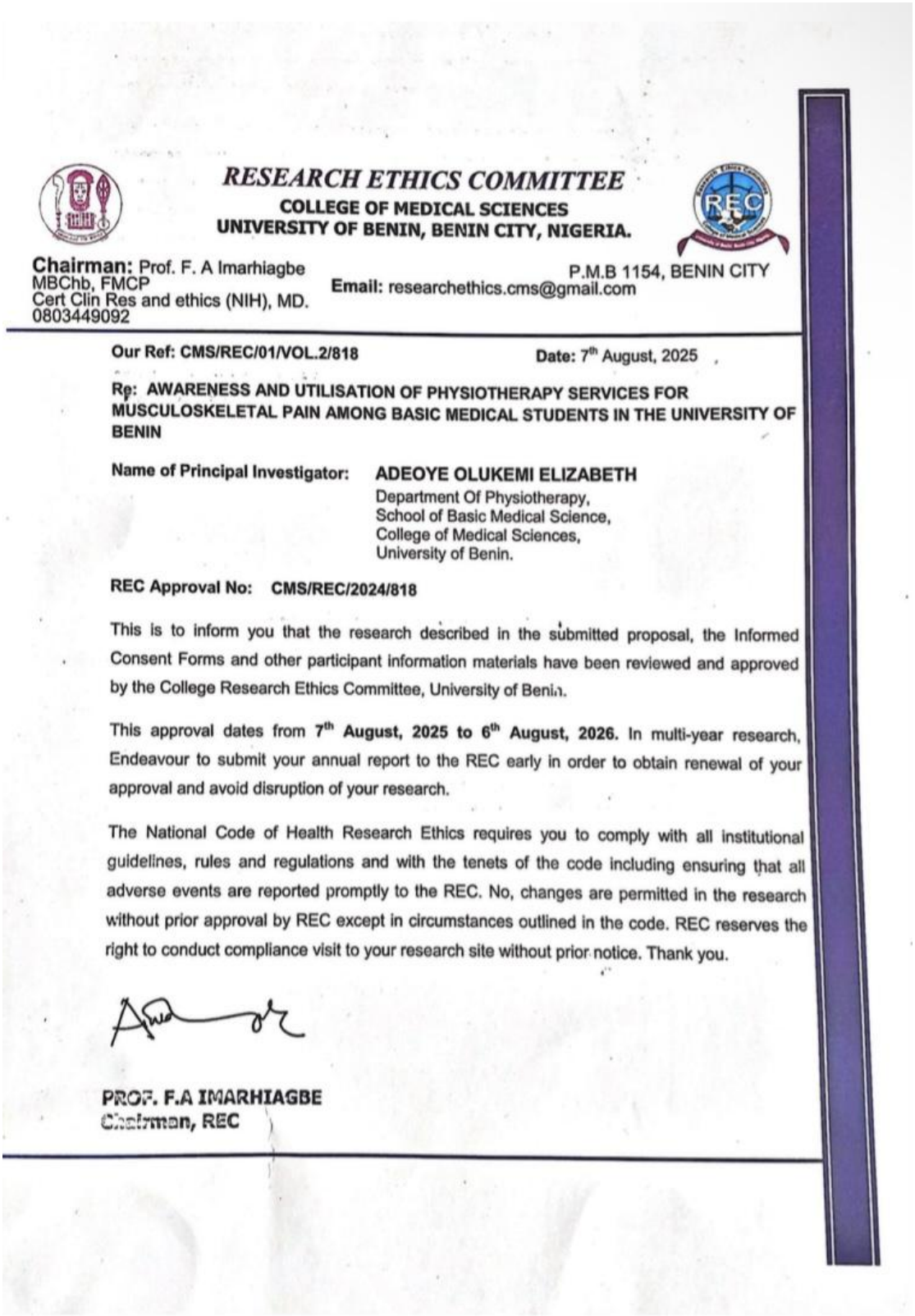
Yes [ ] No [ ]

9. Do you know how you can obtain the services of a physiotherapist if you need them?

Yes [ ] No [ ]

APPENDIX C

ETHICAL APPROVAL



RESEARCH ETHICS COMMITTEE
COLLEGE OF MEDICAL SCIENCES
UNIVERSITY OF BENIN, BENIN CITY, NIGERIA.

Chairman: Prof. F. A Imarhiagbe
MBChb, FMCP
Cert Clin Res and ethics (NIH), MD.
0803449092

Email: researchethics.cms@gmail.com

P.M.B 1154, BENIN CITY

Our Ref: CMS/REC/01/VOL.2/818 **Date:** 7th August, 2025

Re: AWARENESS AND UTILISATION OF PHYSIOTHERAPY SERVICES FOR MUSCULOSKELETAL PAIN AMONG BASIC MEDICAL STUDENTS IN THE UNIVERSITY OF BENIN

Name of Principal Investigator: **ADEOYE OLUKEMI ELIZABETH**
Department Of Physiotherapy,
School of Basic Medical Science,
College of Medical Sciences,
University of Benin.

REC Approval No: **CMS/REC/2024/818**

This is to inform you that the research described in the submitted proposal, the Informed Consent Forms and other participant information materials have been reviewed and approved by the College Research Ethics Committee, University of Benin.

This approval dates from **7th August, 2025 to 6th August, 2026.** In multi-year research, Endeavour to submit your annual report to the REC early in order to obtain renewal of your approval and avoid disruption of your research.

The National Code of Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the code including ensuring that all adverse events are reported promptly to the REC. No, changes are permitted in the research without prior approval by REC except in circumstances outlined in the code. REC reserves the right to conduct compliance visit to your research site without prior notice. Thank you.

PROF. F.A IMARHIAGBE
Chairman, REC