RISK FACTORS AND EFFECTS OF LOW BACK PAIN AMONG NURSES IN EMERGENCY DEPARTMENTS OF KWARA STATE UNIVERSITY TEACHING HOSPITAL, ILORIN, KWARA STATE.

BY

ADENIGBA EMMANUEL OLUWANIFEMI

AT

THOMAS ADEWUMI UNIVERSITY, OKO-IRESE, KWARA STATE

AUGUST, 2025

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF NURSING SCIENCE DEGREE

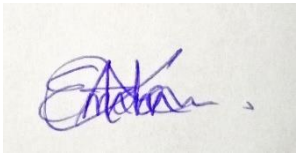
AUGUST, 2025

DECLARATION

This is to declare that this research project titled **RISK FACTORS AND EFFECTS OF LOW BACK PAIN AMONG NURSES IN EMERGENCY DEPARTMENT OF KWARA STATE UNIVERSITY TEACHING HOSPITAL ILORIN, KWARA STATE** was carried out by Adenigba Emmanuel Oluwanifemi is solely the result of my work except where acknowledged as being derived from other person(s) or resources.

Matriculation Number: **20/05NSS002**

In the faculty of Nursing Sciences, Thomas Adewumi University, Oko-Irese, Kwara State.

Signature:  Date: 07/08/2025

CERTIFICATION

This is to certify that this research project was carried out by Adenigba Emmanuel Oluwanifemi with the matric number 20/05NSS002 has been examined and approved for the award of Bachelor of Nursing Science Degree.

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ABSTRACT

Low back pain (LBP) is a widespread public health issue that affects a significant portion of the global population. Despite the prevalence, there is limited understanding of the specific risk factors that contribute to LBP among nurses. Therefore, this study investigates the prevalence, risk factors and effects of LBP in emergency department nurses Departments of Kwara State University Teaching Hospital, Ilorin, Kwara State. The purpose of this study was to: identify the prevalence of LBP among nurses; identify the risk factors that contribute to the development of LBP; to examine the effect of LBP on the psychological wellbeing of nurses and to assess the effects on the performance of nurses. Descriptive survey research design was adopted for this study. 111 nurses were selected using simple random sampling technique. A researcher's designed questionnaire was used to collect data. The research questions were answered using mean analysis and the research hypotheses was done using Pearson Product Moment Correlation and tested at 0.05 level of significance. The findings revealed a high prevalence of LBP (89.9%), with working long shift, especially during night duty or overtime being the major risk factors that contribute to the development of LBP among nurses. Feelings of frustration and low motivation were psychological effects of LBP. Taking breaks often while at work was the major effects of LBP on the performance of nurses. A significant relationship was found between the risk factors and prevalence of LBP among nurses in the emergency department. Conclusively, the study stresses the need for effective workplace strategies to address LBP having identified high prevalence and risk factors associated. Based on the findings, it was recommended that the hospital management should implement ergonomic interventions to reduce the physical strain nurses experience.

Keywords: Low-Back Pain, Prevalence, Risk Factors, Psychological Wellbeing

WORD COUNT: 285

DEDICATION

This research work is dedicated to Almighty God for the wisdom and grace abundantly supplied from the commencement of this project till its completion. This research is also dedicated to my parents Pastor and Dcns. E.O Adenigba for their unwavering support and encouragements all through.

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CHAPTER ONE
INTRODUCTION

1.1. Background of the study

Low back pain (LBP) is a prevalent public health issue, affecting approximately 60-80% of individuals at various stages of their lives (Chen *et al.,* 2022). LBP is a primary reason for morbidity among healthcare workers (HCWs); the nurses are the most affected. Nursing is a profession that is frequently exposed to the risks of low back pain. Nurses work to protect and improve health in cases of health problems for individuals and families. They also spend more time with patients by providing direct care for them when compared to other health care providers. Nurses face high workloads, burnout, stress, and demotivation at work, all of which expose them to LBP in various ways (Kasa *et al.,* 2020).

In Africa, the burden of LBP among nurses is increasingly recognized but remains underreported and under-addressed. The limited availability of ergonomic equipment and understaffed healthcare facilities contribute significantly to the high prevalence rates (Dartey *et al.,* 2023). Sub-Saharan Africa, in particular, faces unique challenges such as resource limitations, high patient-to-nurse ratios, and insufficient occupational health interventions, all of which intensify the risks of LBP among nursing professionals (Okeke & Adebayo, 2022).

In Nigeria, several studies have documented a high prevalence of LBP among nurses, ranging from 40% to 80%, depending on the clinical setting and population studied (Onawola *et al.,* 2022). Emergency departments are especially high-risk areas due to their fast-paced nature, unpredictable patient needs, and often inadequate rest periods for staff. Nigerian nurses are also less likely to receive training on proper lifting techniques and preventive strategies, increasing their vulnerability to back injuries (Edeki *et al.,* 2021).

A recent regional study conducted in North Central Nigeria, which includes Kwara, reported that over 60% of nurses experience varying degrees of low back pain, often linked to workload, poor ergonomic conditions, and inadequate preventive training (Adebayo & Bello, 2023).

Low back pain (LBP) often referred to as lumbosacral pain or lumbago is an unpleasant subjective sensation best described by the individual experiencing it. It has assumed a universal health problem with its prevalence put at 40% of the general population (Mohammadi *et al,* 2019). The experience of LBP in relation to the inherent nature of the nursing job is typically determined by a variety of influencing factors. According to recent studies, for example, LBP is often affected by sociodemographic characteristics, such as sex, age, body mass index (BMI), and experience. Studies also show that conditions at the workplace, such as overtime duties, prolong working hours, working posture, and work shifts are significant predictors of LBP. Additionally, lifestyle factors, such as obesity, and lack of physical activity, and psychological issues, such as stress and job satisfaction, have a substantial effect on incidences of LBP. (Almaghrabi & Alsharif, 2021).

LBP may result from work-related issues which include poor posture, such as bending or twisting positions. According to studies, nurses with LBP had to undergo medical or surgical procedures, some had to change jobs, and others had planned to leave the nursing profession. Furthermore, as nurses' health deteriorates, it could have an impact on how well patients are cared for and, ultimately, their health, as well as have a significant financial impact on individuals, families, communities, and the nation as a whole. Although there was a substantial amount of heterogeneity among the research conducted around the world, LBP is still very common among nurses, and 72.2% of nurses reported having LBP, according to a study done in Ethiopia. (Ayane *et al,* 2021).

In their day-to-day work, nurses are exposed to activities that create favorable conditions for low back pain (LBP), such as lifting and transporting patients or equipment, twisting, bending, sustained posture, and repeated movements. They often perform such tasks in challenging environments, particularly in developing nations where lifting aids are not available or unattainable. This task vigorously affects the back, leading them to experience different musculoskeletal complaints. Therefore, the occurrence of LBP is higher in nurses than in other health professionals and the rest of society. It was reported that billions of dollars were expended yearly on the management of LBP, and the nursing shortage has been exacerbated by the burden of LBP and related disabilities. Therefore, recruitment and retention of nurses have become challenging (Banga *et al,* 2024).

LBP is considered one of the top ten conditions contributing to disease and disability, with an estimated number of disability-adjusted life years higher than some global burdens diseases such as tuberculosis, lung cancer, and road traffic accident (Jradi *et al,* 2020).

Among the health workers, the most vulnerable group is nurses. Most of the nurses in any hospital suffer from low back pain, either due to occupational or individual reasons, and the reason for low back pain is usually multifactorial. Low back pain leads to decreased labor productivity and labor force participation, which eventually leads to economic loss. It indirectly affects society and the economy of the country. According to research by Harrington and Gill, low back discomfort is the leading cause of early retirement due to illness, sick leave, job changes, and slower work speeds. Nurses often forego personal hygiene and comfort in favor of lifting and transporting patients. Due to a dearth of available medical personnel and an increase in the number of patients, the majority of nurses are being forced to work overtime. Among the

working population, nurses are disproportionately affected by low back pain (Kanakkarthodi *et al,* 2022).

Healthcare workers (HCWs) often experience LBP more than any other category of workers. The prevalence rate ranges from 53% among the general healthcare workforce to 87% among health workers in the operating room. Among different categories of healthcare workers, Walid and Hoque reported a 60.3% prevalence rate of LBP among doctors in the tertiary level of hospitals in Sylhet. Among Iranian nurses, Mohammadi and colleagues documented a prevalence rate of 68.4%, while a prevalence rate of 73.5% was documented among nurses in secondary and tertiary levels of hospitals in Bahrain. Prevalence rates ranging between 38.1% and 63.8% of LBP were reported among nurses in Ethiopia. In South Africa, a prevalence rate of 59% was reported among nurses in a regional hospital in KwaZulu-Natal (Matthew *et al,* 2022).

A previous study on nurses in Africa has shown that the prevalence of low back pain is at its highest in Nigeria (Kasa *et al*, 2020). In a study on nurses at a teaching hospital in Nigeria, Idowu *et al.* reported a 71.4% prevalence rate of LBP. Furthermore, female gender, advanced age, high body mass index, lack of regular exercise, being married, long-standing while working, long years of service, and low job satisfaction had been found to increase risk of LBP among HCWs (Matthew *et al,* 2022).

In comparison with the general population, work-related illnesses and injuries are more common in the healthcare industry. Particularly nurses are at higher risk of developing lower back pain (LBP), with prevalence rates in Saudi Arabia in 2021 of 80.9%, 90.2% in Italy, 59% in Africa, and 85.9% in England. LBP is a problem that affects nurses in Qatar and other nations as well. (Jonalyn, 2022).

In Kwara State, and specifically within the Kwara State University Teaching Hospital in Ilorin, clinical observations suggest a growing concern about the incidence and impact of LBP among nurses working in the emergency department. However, there remains a paucity of localized data on the specific risk factors contributing to LBP in this context. Identifying these risk factors and understanding the effects of LBP on nurses' physical, emotional, and professional well-being is crucial for designing effective interventions that enhance occupational health and service delivery.

This study, therefore, seeks to investigate the risk factors and effects of low back pain among nurses in the emergency departments of Kwara State University Teaching Hospital. By situating the problem within both a global and local context, this research aims to provide evidence-based insights to guide policy and workplace improvements in Nigerian healthcare settings.

1.2.Statement of the problem

Nursing is a highly risky occupation for the incidence of pain at the low back. In addition, the one of the most common well-being issues in nursing profession is low back pain. Also, in working population, the maximum level of work related back injuries were found in nursing profession. This is because of high demand of bodily work required in their job, such as lifting and moving of patients, manual handing and job-related psychological stress. Other factors are distributions in nutritional status such as obesity, anemia and HIV can also cause LBP among nurses. As compared to other health care professionals, nursing staff face a higher exposure rate of occupational hazards. These occupational hazards may be mechanical or psychological. Mechanical hazards may include heavy lifting, frequent patient handling, twisting and bending, standing for long hours, prolonged sitting, which may lead to LBP among nurses. While psychological hazards refer to poor job satisfaction, low self-esteem and monotony at work; however, anger has been examined and related to occurring of LBP among nurses. (Rashid et al, 2023)

Low back pain (LBP) has become an increasingly common occupational hazard among nurses globally, particularly in emergency departments where the demands of patient care are high. Despite global recognition of the burden of LBP, many healthcare systems in Africa, including Nigeria, continue to lack adequate preventive strategies, policies, and resources to address it effectively. Nurses in emergency settings often work under conditions that involve manual patient handling, awkward postures, prolonged standing, and inadequate ergonomic support, all of which contribute to the development of LBP (Dartey *et al.,* 2023; Onawola *et al.,* 2022).

In Nigeria, high patient-to-nurse ratios, irregular shift patterns, and lack of occupational health training exacerbate the risk of musculoskeletal injuries. While some studies have been conducted

nationally, there is a noticeable gap in localized research that explores both the risk factors and consequences of LBP on nurses' well-being and job performance (Edeki *et al.,* 2021).

In Kwara State, and particularly at the Kwara State University Teaching Hospital, no comprehensive study has been conducted to identify the specific risk factors contributing to LBP among emergency department nurses or the extent to which it affects their health, productivity, and quality of care.

This gap in knowledge poses a threat to the well-being of nurses and the quality of emergency services provided. Without evidence-based data from this region, policymakers and hospital administrators may continue to underestimate the seriousness of the problem and delay critical interventions. Hence, this study aims to examine the risk factors and effects of low back pain among nurses working in the emergency departments of Kwara State University Teaching Hospital, Ilorin.

1.3 **Objectives of the study**

Broad objective

The broad objective of this study is to examine the risk factors and effects of low back pain among nurses in the emergency departments of Kwara State University Teaching Hospital Ilorin, Kwara State.

Specific objectives are to:

i. identify the prevalence of low back pain among nurses working in the emergency department
ii. identify the risk factors that contribute to the development of low back pain among nurses
iii. assess the effects of low back pain on the performance of nurses in the emergency department
iv. examine the effects of low back pain on the psychological wellbeing of nurses in the emergency department

1.4 **Research questions**

1. What is the prevalence of low back pain among nurses in the emergency department?
2. What are the risk factors contributing to the development of low back pain among nurses?
3. What are the effects of low back pain on the delivery of care by nurses?
4. How does low back pain affect the psychological wellbeing of nurses working in the emergency department?

1.5 **Hypothesis**

1. There is no significant relationship between the risk factors and prevalence of low-back pain among nurses in the emergency department

1.6 **Significance of the study**

1. This study will help create awareness among nurses about the risk factors of low back pain and the effects of this on their health and the preventive measures to apply into practice to prevent them from sustaining back pain.
2. The study will also inform the hospital administrators on the underlying conditions which affect the quality of care to the patients and morbidity among nurses and measures to adopt to reduce this.
3. The findings of this study serve as a reference for future researchers to solve problems especially on low back pain thereby ensuring good health of nurses working in the society at large.

1.7 **Scope of the study**

This study was carried out in Kwara State University Teaching Hospital, Ilorin, Kwara State, among the registered nurses working at the emergency departments as the target population.

1.8 **Operational definition of terms**

Risk factors: something that increases a person's chances of developing low back pain.

Effects: the outcome of low back pain on the performance of nursing activities.

Low back: known as the lumbar region, it refers to the area of the spine located between the lower edge of the ribs and the buttocks.

Pain: an unpleasant sensory and emotional experience associated with actual or potential tissue damage.

Low back pain: pain in the lower back that lasts for at least 30 minutes which is not related to menstruation, genito-urinary, or any gynecological problems.

Nurse: a registered individual with expertise in patient care rather than research or administration.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

This chapter reviews relevant scholarly publications on the subject matter; risk factors and effects of low back pain among nurses in the emergency departments of Kwara State University Teaching Hospital Ilorin, Kwara State. The research title guided in the review of scholarly articles from both national and international journals.

However, this chapter will be discussed under the following sub-headings:

- Introduction
- Conceptual review
- Theoretical review
- Empirical review

2.1 Conceptual review

2.1.1 Definition of low back pain

The phrase "low back pain" refers to the uncomfortable sensation experienced in the area between the 12th rib and the folds of the buttocks, which may or may not extend to one or both legs (Urits et al, 2019). It refers to pain experienced between the lower rib cage and buttock creases but can extend into the legs. It is not a single condition but rather a symptom with many underlying causes. Although a specific diagnosis is available for some, for most, the condition is referred to as “non-specific,” meaning there is no identifiable cause. New episodes can recover quickly, but persistence or recurrence is common and characterized by repeated episodes separated by periods of remission or ongoing pain with frequent “flares” (Costa et al, 2019).

The North American Spine Society defines "low-back pain" as "pain of musculoskeletal origin extending from the lowest rib to the gluteal fold (below the buttocks), that may at times extend as somatic referred pain into the thigh (above the knee)."

2.1.2. **Risk Factors for Low Back Pain**

Nursing is a profession that is frequently exposed to the risks of low back pain. Nurses work to protect and improve health in cases of health problems for individuals and families. They also spend more time with patients by providing direct care for them when compared to other health care providers. Nurses face high workloads, burnout, stress, and demotivation at work, all of which expose them to LBP in various ways. In their day-to-day work, nurses are exposed to activities that create favorable conditions for low back pain (LBP), such as lifting and transporting patients or equipment, twisting, bending, sustained posture, and repeated movements. They often perform such tasks in challenging environments, particularly in developing nations where lifting aids are not available or unattainable. This task vigorously affects the back, leading them to experience different musculoskeletal complaints. Therefore, the occurrence of LBP is higher in nurses than in other health professionals and the rest of society. (Banga et al., 2024)

The risk factors associated with LBP have been presented in several studies, including demographic, behavioral, and workplace/employment factors. The demographic and behavioral factors linked with LBP include age, smoking status, and physical activity. Further risk factors include years of experience, professional classification, the number of patients receiving direct care, work posture, carrying of heavy items or patients, self-reported knowledge of LBP, job satisfaction, and occupational stress (Jradi et al., 2020).

Physical and psychosocial variables are linked to musculoskeletal illnesses related to the work-place. Awkward postures, prolonged standing or sitting, repetitive manual labor, and manual handling of objects, including patient handling, are examples of physical factors. Organizational and job content variables are considered psychological factors. High workloads, strict deadlines, and a lack of control over work and working techniques are all factors that are related to the content of a job. Organizational features address risk factors such as financial demoralization, bad work/rest cycle, poor community support, and inadequate communication with supervisors and co-workers. Other associated factors may include individual–related factors comprising demography and lifestyle factors. Age, body mass index, and gender are among the demographic variables. Lifestyle factors that may contribute to the development of musculo-skeletal disorders include those relating to drinking, smoking, exercise, sports, leisure activities, housework, and other responsibilities that individuals play outside of the job. (Nemera et al 2024)

Therefore, the risk factors can be classified into:

- Work-related factors including physical and psychological variables
- Other factors like demographic and lifestyle factors

Work-related factors: include awkward postures, prolonged standing or sitting, repetitive manual labor, and manual handling of objects, patient handling, bad work/rest cycle. Some work-related factors for LBP are highlighted and discussed below.

Patient handling

Patient-handling has a burden of severe biomechanical load on spinal parts of the body that impact the prevalence of LBP among nurses. Schlossmacher and Amaral research showed that the prevalence of low back pain symptoms in nursing professionals was approximately between

15% and 72% and the main cause was the transfer of the patient from bed to chair. (Samaei et al 2017)

Awkward Postures

Physical workload measured by awkward position was also found to be associated with WR-LBP (Work-related Low back pain). This finding similar to several Nursing WMSD (Work-related musculo-skeletal disroder) studies. This could be explained that the physical task demand of the nurses could develop the biomechanical tension in musculoskeletal tissue then cause micro-trauma and could develop inflammation of this tissue. Barbe and Barr also suggest the three important pathway of the development of WMSD as a result of repetitive and forceful task namely: ‘‘CNS reorganization, tissue injury and tissue reorganization’’. (Doda et al 2020)

A review of high-risk tasks in this occupation specifies that most tasks require awkward postures during various activities, and nurses sometimes need to perform tasks for a prolonged period with a flexed trunk. Awkward postures are known to be the most common and most significant factors associated with the occurrence of musculoskeletal disorders among nurses. It has been reported that awkward postures and frequent heavy lifting have a particularly significant effect on workers’ low back pain. Studies have shown that a combination of awkward postures, external loads, and the frequency and duration of high-risk tasks such as transferring or lifting a patient may well represent the most significant mechanical loads on the spine. (Nourollahi et al 2018)

Psychosocial Factors

In a study conducted by Doda et al, 2020, ERI-Psychosocial did not show significant correlation but the ‘effort’ psychometric scale score did. According to Siegrist, the effort psychometric scale

refers to challenging aspects in a workplace that includes the quantitative and qualitative workload, as well as the overtime workload. As known nurses in ECU (Emergency Care Unit) are exposed to physical and psychological demanding workloads, where they need to do their work at the high pace. Therefore, it not surprising that 'effort' psychosocial factors contribute to the development of low back pain among nurses in the ECU.

Contributing Factors:

Obesity

Karahan showed that obesity was a serious risk factor of LBP, decrease in abdominal muscle strength and increase in lumbar lordosis. Alexsopoulos also found that high BMI was significantly related to chronic LBP and absence of work due to low back and shoulder pains. Maintaining a normal body weight reduces the pressure on the lower spine and excess abdominal weight pressure on the vertebrae that may lead to chronic spasms in the lower back region. (Samaei et al 2017)

Olasupo et al (2023) in their research stated that according to the BMI of the respondents, more than one-third 76(38%) were overweight, 64(32%) were obese, and 60(30%) had normal weight. Prevalence of overweight and obesity will put the majority of nurses at increased risk of LBP. Olasupo et al (2023) also stated that concerning engagement in exercise by the nurses, the majority (59%) did not engage themselves in regular exercise. Supportively, Mekonnen (2019) in a similar study in Ethiopia found out that just 28.5% engage in regular exercise. Their increased BMI and physical inactivity will most likely put them at increased risk of low back pain as revealed by Buchbinder et al., 2018, Johnson and Emmanuel, 2016 who stated how an increased

BMI of ≥25 kg/m^2 (overweight and obesity) and physical inactivity were significant predictors of low back pain. (Olasupo et al 2023)

Age

Nursing professionals over the age of forty had a higher prevalence of LBP than those under the age of thirty-one, with rates of 48.5% and 51.6%, respectively. This is a result of ageing, which is typically accompanied by a decline in athletic capacity and muscle power, which causes discomfort as a side effect of musculoskeletal disorder. Muscle strain, muscle atrophy, and muscle weakening that come with advancing age will cause the person to feel discomfort as they age. (Ayane et al 2021)

The association of age and Low Back-WMSDs shows that the age of less than 30 more likely to experience WR-LBPs than those age group of more than 30. Our study explained that most of the nurses at ECU were young people less than 30 years old, so they were in charge to serve most of the patients, therefore most of them may more likely experience Low Back-WMSDs. Previous studies were in line with this study, however they found that age more than 40 years were associated with musculoskeletal pain and discomfort (Doda et al 2020).

Smoking

The World Health Organization (WHO) reports the number of deaths due to smoking each year is 4.9 million and by 2020 it will reach 10 million people per year. There is a significant relation between smoking and lumbago, especially for jobs that require muscle exertion, because nicotine in cigarettes can cause reduced blood flow to the tissues. In addition, smoking can also cause reduced mineral content in bones, causing pain due to fractures or damage to bones. Smoking habits can reduce the ability of the lungs to support oxygen so that oxygen distributed to the

tissues, including the musculoskeletal system, is low. As a result, energy production decreases, accompanied by the buildup of lactic acid as a product of anaerobic respiration which causes fatigue to muscle pain. (Hambar et al 2020).

Azizpour et al (2017) stated in their study that the rate of LBP was higher among non-smokers, i.e., 73.6% (95% CI: 68.8–78.5; *P*-value <0.0001) in comparison to smokers.

Gender

While mechanical disadvantages like sprains and strains are more common in women than men, some researchers believe that gender variations in anatomy, physiology, and structure are to blame for the disproportionate number of female casualties. (Kanakkarthodi et al 2022).

According to a study conducted by Banga et al (2024), females are 1.82 times more likely to have low back pain when compared to males [AOR 1.82; 95 % CI (1.07–3.08)]. This is consistent with previous research conducted in Jordan, Amhara region Ethiopia, Sudan, South Africa. This could be related to physiological differences between males and females, such as menstruation and pregnancy, as well as anatomical and structural differences, hormone changes (especially in postmenopausal women, estrogen levels decrease, and collagen wasting), gynecological disorders, and childbirth. (Banga et al 2024).

2.1.3. **Effects of Low Back Pain**

The impact of LBP includes: loss of physical function; deterioration of general health and reconditioning (loss of muscle tone and weight gain); constant or episodic pain or increase in the level of pain; loss of social functioning manifested as decreased participation in social and leisure activities; deterioration of the quality of life (QoL); family stress or loss of group and community relatedness (often associated with decreased income and/or job loss); and disruption

of psychological functioning manifested through insomnia, irritability, anxiety, depression, and somatic complaints. Moreover, members of the nursing staff belong to the group of high-risk professionals because of the occurrence of musculoskeletal injuries, especially lumbar spine injuries, which can significantly interfere with the quality of life and general function of nurses. Musculoskeletal injuries and disorders are detrimental to the nurse and to the patients and the organization. (Al-Mutairi, 2019).

In terms of the impact of LBP on workers, a study involving 187 countries pointed out that it was the major cause of disability and absence from work. A few studies have demonstrated that physical and mental demands may bring nurses to terminate their jobs. Persistent LBP can decrease the quality of life among workers and affect them psychologically. (Ibrahim et al 2019).

Physical Effect

As physical component of health and quality of life, it was indicated that LBP affect physical functions adversely and cause role limitations due to physical health problems. It is stated in the literature that especially chronic pain restricts functionality and daily life activities of individuals. In parallel with the literature in our study negative correlation was found between nurses' functional disability (ODI) and quality of life level (SF-36). Our findings may be explained by fear avoidance behavior of nurses. Nurses who suffer from LBP may limit their activities and responsibilities to prevent additional pain (Tosunoz & Gursel, 2020)

Psychological Effect

As mental component of health and quality of life, in our study it was indicated that LBP affect social functioning, mental health adversely and cause role limitations due to emotional problems.

It is stated in the literature that LBP leads to psychological distress, withdrawal, anxiety, loneliness, anger, and affecting the social status of patients (Tosunoz & Gursel, 2020)

Economic Effect

According to Kahere et al (2020), the burden of LBP is multifaceted and includes but not limited to pain, disability, carer burden, financial burden and healthcare resource utilization. In the USA, the annual direct cost of LBP has been estimated to be US$100 billion, and €2 billion to €4 billion in Europe per year. Approximately half of the LBP cases in primary care fluctuating pain of low-to-moderate intensity, some recover and some progress to persistent disabling severe back pain. The majority of LBP cases resolve within 2–6 weeks and only a small percentage progresses to persistent/chronic disabling back pain.

Effect on duty performance

According to a study conducted by Olasupo et al (2023), the effect of LBP on duty performance has been shown to include the inability to care for patients as appropriate (43%), absenteeism at work (35%), intention to change workplace (15%), and intention to quit the nursing profession (40%). Supportively, Moussa et al. (2015) found out nurses may be forced to quit their jobs or change their workplaces because of LBP. Likewise, similar findings have been reported by Ike and Olawumi (2018) who found out low back pain directly affects nurses' productivity at work and reduces the overall amount and quality of health care the clients receive. (Olasupo et al, 2023).

Low back pain has numerous impacts on nurses, which includes time off work, increased risk of chronicity, as well as increased personal and medical cost. It also leads to impaired professional

function and decreased quality of care provided to the patient, negatively affecting the health of the client. (Tefera et al, 2021).

Tefera et al (2021) stated that low back pain is a major cause of disability that affects the quality of life as well as work performance. The high prevalence of low back pain in intensive care unit nurses negatively affect the quality of care in nursing, since patients in the ICU need nurses' assistance every minute of their life.

2.2. **Theoretical Framework**

A theoretical framework engineered by the Health Belief Model was used in this study. The Health Belief Model is a behaviour change model. The Health Belief Model was first developed in the 1950s by social psychologists Irwin M. Rosenstock, Godfrey M. Hochbaum, S. Stephen Kegeles, and Howard Leventhal working in the United States Public Health Services. According to Rosenstock's, the preventive behavior is dependent upon the willingness of the individuals to accept a more active role in caring for their own health and that changes of behavior depends on the following factors:

1. Perceived severity
2. Perceived susceptibility
3. Perceived benefits
4. Perceived barrier
5. Cues to action
6. Self-efficacy

Perceived severity: the term "perceived severity" describes how one feels about a health issue and the possible repercussions of it. According to the health belief model, people who consider a

certain health issue to be significant are more likely to take actions to stop it from happening or lessen its severity. Views concerning the sickness itself, such as whether it is potentially fatal or may result in pain or impairment, as well as the disease's wider effects on societal and occupational functioning, are all included in the concept of perceived severity.

Perceived susceptibility: the term "perceived susceptibility" describes the individualized evaluation of the likelihood of experiencing a health issue. According to the health belief model, people will take actions to lower their chance of contracting a certain health issue if they believe they are vulnerable to it. People who believe they are not susceptible to a certain sickness may refuse to believe they are at danger of getting it.

Perceived benefits: The advantages of acting are another factor that influences health-related behavior. The term "perceived benefits" describes how someone evaluates the worth or effectiveness of adopting a habit that promotes health in order to lower their risk of illness. Regardless of objective information about the efficacy of a certain action, a person is likely to engage in it if they believe it will lessen their vulnerability to a health problem or lessen the severity of the problem.

Perceived barriers: a person's perception of the challenges to changing their behavior is referred to as perceived barriers. Disadvantages may keep someone from engaging in a health-promoting behavior, even if they think that doing so will significantly lessen the threat that their health condition poses. Put otherwise, for a shift in behavior to take place, the advantages must be seen greater than the disadvantages. Concerns about perceived costs, inconveniences, risks (like adverse effects from medical procedures), and discomforts (like pain or mental distress) associated with the behavior are some examples of obstacles that prevent people from acting.

Cues to action: The health belief model suggests that a cue or trigger is essential for initiating health-promoting behaviors. These cues to action can be either internal or external. Internal cues include physiological signals such as pain or symptoms, while external cues come from sources like family, media, or healthcare providers encouraging health-related actions. The strength of the cues required to motivate behavior varies among individuals based on their perceived susceptibility, severity, benefits, and barriers.

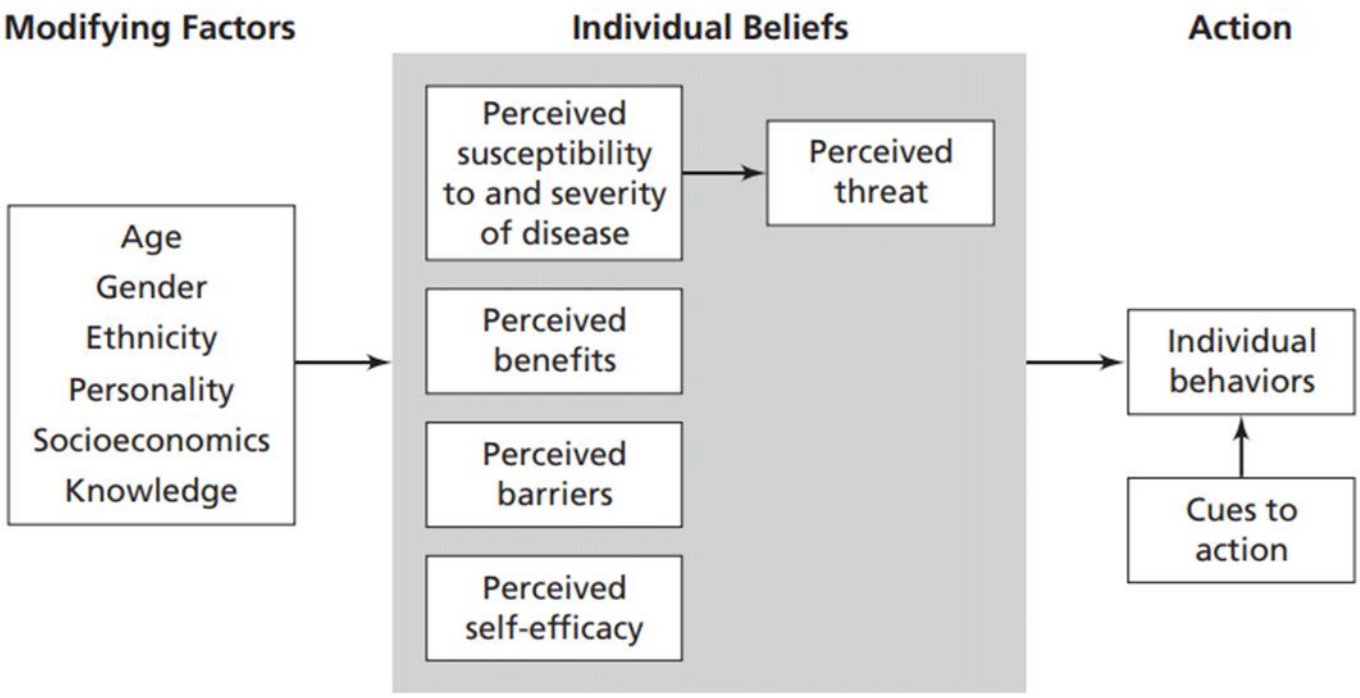
Self-efficacy: Self-efficacy is defined as an individual's belief in their ability to successfully execute a particular behavior.

Relevance of the theory to the study

1. **Perceived Susceptibility**: The model can help assess nurses' beliefs about their risk of developing low back pain. Understanding these perceptions can inform interventions to increase awareness and preventive measures.
2. **Perceived Severity**: Evaluating how seriously nurses view the impact of low back pain on their health and ability to provide care can highlight the importance of addressing this issue.
3. **Perceived Benefits**: Exploring nurses' beliefs about the effectiveness of interventions (e.g., ergonomic training, physical therapy) can guide the design of programs that they are more likely to adopt.
4. **Perceived Barriers**: Identifying obstacles that prevent nurses from engaging in preventive behaviors (e.g., time constraints, lack of resources) can help in developing strategies to overcome these barriers.

5. **Cues to Action**: The HBM can help identify the triggers that motivate nurses to take action against low back pain, such as educational programs, reminders from management, or observing colleagues with similar issues.
6. **Self-Efficacy**: Assessing and improving nurses' confidence in their ability to perform preventive measures (e.g., using proper lifting techniques) is crucial for the successful implementation of interventions.

By applying the Health Belief Model, healthcare organizations can better understand the beliefs and perceptions that influence nurses' behaviors regarding low back pain prevention. This understanding can help in designing interventions that effectively promote the adoption of preventive measures, thereby improving nurses' health and the quality of care they provide.



(Adopted from Champion and Skinner (2008))

2.3. **Empirical Review**

A cross-sectional descriptive study conducted by Osunde et al (2023) on Low Back Pain Among Nurses as related to work environment with probability sampling to select a sample size (n = 260), reveals that among 260 nurses with backache, 159 (61.15%) were male and most of the participants' ages were between 25 and 34 years, with a mean age of 26.5 (0.37). The multivariate logistic regression analysis showed that heavy manual lifting (odd ratio [OR] 0.21, 95% confident interval [CI] 0.54–0.73), body posture (OR 0.31, 95% CI 0.20–1.08), the length of working shift (OR 0.60, 95% CI 0.74–0.86), awkward postures (OR 0.68, 95% CI 0.65–1.10), and prolonged standing during nursing care (OR 0.73, 95% CI 0.52–1.00) were the major factors for LBP among nurses, with <0.001, 0.001, 0.002, 0.002, and 0.003, respectively.

According to a study conducted by Ayane et al (2021) on Low Back Pain and Its Risk Factors Among Nurses Working in East Bale, Bale, and West Arsi Zone Government Hospitals, Oromia Region, South East Ethiopia, a total of 427 nurses engaged in the interview out of the 440 participants that wanted to take part in the study, yielding a response rate of 97.1%. Low back pain was revealed to be 42.6% more common over a year.

In a study conducted by Sultana et al (2023) on the Contributing Factors Towards Low Back Pain Among Front Line Health Care Workers in Lahore, Pakistan, involving 191 nurses working in the four public hospitals of Lahore, the regular prevalence of low back pain was revealed to be 41.4%. The highest ratio of contributing factors towards low back pain was physical, (poor posture 36.6%), while in the psychological factors, fatigue was 52.4%, whereas in the social factors, age was 35.6%, similarly in patient care, lifting a heavy patient was 23.6%, and work environment workload was 36.6%.

A study conducted by Aishah et al (2021) on the Prevalence of Low Back Pain and associated Risk Factors among Nurses back pain revealed the lowest and the highest prevalence among the studies to be 53.4 % and 85.9% respectively. It also revealed that age, body mass index, and female gender were the most reported individual risk factors and occupational risk factors mainly included work-related activities requiring lifting and pulling objects, manual patient-handling, total years of work.

In a study involving 514 nurses conducted by Tosunoz et al (2020) on the Effects of Low Back Pain on Functional Disability Level and Quality of Life in Nurses Working in a University Hospital, it was found that 85.4% of the nurses had low back pain at any stage of their life and 57.8% had continuing back pain. The results of this study revealed that LBP is a common health problem among working nurse and affects the nurses' quality of life adversely and results in disability.

According to a study conducted by Kanakkarthodi et al (2022) on Low Back Pain Among Nurses in a Tertiary Care Teaching Hospital at Malappuram Kerala among 220 nurses, 89 (40.4%) complained of mild low back pain, 86 (39.09%) complained of moderate pain, and seven (0.03%) of them had severe low back pain. Due to low back pain, among the 182 (82.7%) nurses who have low back pain, 46 of them had to take one or more days' leave from work. Thirty-six nurses have had low back pain for more than four years. As a mode of treatment, 43 nurses have taken either medicine or injection; 25 of them have taken rest; four are on Ayurvedic treatment, and 110 nurses haven't taken any treatment.

A study was conducted by Banga et al (2021) among 391 nurses to assess the prevalence of low back pain and associated factors among nurses working in public hospitals in Hawassa City, Sidama Region, Southern Ethiopia, giving a response rate of 98.2 %. The one-year prevalence of

low back pain was 242(61.9 %). Being female, body mass index ≥25 kg/m^2, not getting assistance from coworkers and not using of the assistive device were factors significantly associated with low back pain among nurses.

Almaghrabi et al (2021) conducted a study on the Prevalence of Low Back Pain and Associated Risk Factors among Nurses at King Abdulaziz University Hospital. This revealed that the cumulative prevalence of LBP was 82.9%, annual prevalence was 85.5%, while one-week prevalence of LBP was 53.6%. The factor significantly associated with LBP over the past 12 months was manual lifting of patients ($p = 0.030$). It also revealed that nurses working in surgical wards had higher prevalence of LBP. About 24.7% of them changed their working unit, hospitalization was necessary for 11.9%, and 39.8% sought medical care.

Findings from a study conducted by Oyediran et al (2022) on the Predictors of Low Back Pain among Perioperative Nurses in a Typical Nigeria Teaching Hospital revealed that about two-third of the nurses were fifty years and above with proportion of female (54.9%) slightly higher than the male proportion (44.1%). Over 40% have 6-10 years of working experience. Over 50% experience low back pain weekly while over 60% asked for excuse duty monthly due to workplace stress and low back pain. Predisposing causes of low back pain was attributed to long-standing hours at work, lifting of heavy equipment, working posture, workload, work shift, body mass index, age and sedentary lifestyle. Perioperative nurses who were above 50 years are 3 times more likely to experience low back pain.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0. **Introduction**

This chapter describes the research design, research setting, target population, sample and sampling technique, instrument for data collection, validity of the instrument, reliability of the instrument, method of data collection and data analysis with ethical consideration.

3.1. **Research Design**

This research is a descriptive type of a non-experimental design. It was designed to obtain information from the nurses working in the emergency departments of Kwara State University Teaching Hospital, Ilorin, to examine the risk factors and effects of low back pain on them.

3.2. **Research Setting**

This research was conducted at Kwara State University Teaching Hospital, Ilorin. It is one of the tertiary health care institutions owned by Kwara State Government. It is situated along Surulere Area Opposite Queen Elizabeth Secondary School. It was established in 1957, during the colonial era in Nigeria. It was known as the Ilorin Provincial Hospital at that time. In 1980, the hospital was leased to the Federal Government when it was used temporarily by the University of Ilorin for the medical students and other healthcare professional course up till 2010 where it served as a tertiary health facility. When the permanent site of the University of Ilorin Teaching Hospital was concluded, the hospital was returned back to the state government. Extensive renovation occurred between the year 2011-2012 and was renamed General Hospital Ilorin and used as a secondary healthcare facility.

In June 2024, it was upgraded to a tertiary health care facility and renamed Kwara State University Teaching Hospital (KWASUTH).

It provides total quality healthcare that guarantees patients satisfaction. The services include accident and emergency, surgical services, medical services, pediatrics, obstetrics and gynecology, pharmacy, physiotherapy, dental services and psychiatry.

3.3. **Target Population**

The target populations for this study are nurses of different cadres working in the Emergency Department of Kwara State University Teaching Hospital Ilorin, Kwara State ranging from Nursing Officers to Chief Nursing Officers.

3.4. **Sample and Sampling Techniques**

A simple random technique was used for the study based on the readily available respondents that are willing to participate. The sample size for this study is 111 nurses working in the emergency units of the hospital.

3.5. **Sample size Determination**

Slovin's formula was employed to determine the appropriate sample size for this study. The target population comprised 55 nurses from the Accident and Emergency Department, 54 nurses from the Gynaecology Department, and 51 nurses from the Emergency Paediatrics Unit of Kwara State University Teaching Hospital, Ilorin.

Slovin's formula is given as:

$n = N / (1 + N(e)^2)$

Where:

n = required sample size

N = population size (160)

e = margin of error (0.051)

Substituting into the formula:

$n = 160 / (1 + 160(0.051)^2)$

$= 160 / (1 + 160(0.002601))$

$= 160 / (1 + 0.4162)$

$= 160 / 1.4162$

$= 112.96 \approx 113$

To accommodate for potential attrition, an attrition rate of 2% was applied:

Adjusted sample size $= 113 \times (1 - 0.02)$

$= 113 \times 0.98$

$= 110.74 \approx 111$

Therefore, a total of 111 nurses were included in the final sample used for the study.

The table below shows the calculation of proportional allocation by ward:

Using the formula

$$n_i = (N_i / N) \times n$$

Where:

n_i = Number of nurses selected from each ward

N_i = Number of nurses in that ward

N = Total nurse population across the three wards (160)

n = Total sample size (111)

Ward	**Population (N_i)**	**Formula Applied**	**Calculated Value (n_i)**	**Final Sample Allocated**
Adult Accident & Emergency (A&E)	55	(55 / 160) × 111	38.2	38
Obstetrics & Gynaecology Emergency (O&G)	54	(54 / 160) × 111	37.4	37
Emergency Paediatrics Unit (EPU)	51	(51 / 160) × 111	35.4	36
Total	160		111.0	111

3.6. **Instrument for data collection**

A self- developed structured questionnaire was used for the research study. It was structured basically into five sections.

Section A: Contains demographic data

Section B: Prevalence of low back pain

Section C: Contains the risk factors for low back pain among nurses

Section D: Effects of low back pain on psychological wellbeing of nurses

Section E: Effects of low back pain on performances of nurses in emergency department

3.7. **Validity of the instrument**

The content and face validity of the instrument was done in accordance with the literature review and was subjected to review by the supervisor who made modifications before approval for subsequent administration to the respondents.

3.8 **Reliability of the instrument**

The reliability of the instrument that was used in this study was validated through a pilot study after which a test-retest reliability method was employed. The instrument was administered to the nurses working in the emergency departments of Sobi Specialist Hospital, Sobi, Ilorin, Kwara State. The two sets of data were collected and correlated.

3.9. **Method of data collection**

An introductory letter was collected from the school authority which was given to the Director of Nursing Services who subsequently directed the researcher to the Chief Nursing Officer in the

unit. Copies of the questionnaire were administered to the respondents after introducing the researcher to the selected respondents. The questionnaires were administered to the subjects on individual basis and were filled under the supervision of the researcher.

3.10. **Method of Data Analysis**

The data collected were analyzed after grouping, they were presented using sample percentages in tables and figures including bar chart. The demographic data and some of the variables in the research questions were analyzed using descriptive statistics while the hypothesis was tested using Pearson Product Moment Correlation (PPMC)

3.11. **Ethical Considerations**

An introductory letter was obtained from the school authority to serve as legal backing and that the research is mainly for academic purpose. Confidentiality was maintained as respondents that were used for the research are instructed not to write their names to prevent identification. They were also assured that whatever information given were treated private, hence, they were advised to answer the questions in the questionnaires sincerely after an informed consent had been obtained.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF RESULTS

4.1 Introduction

This chapter contains the analysis of the data obtained from the copies of the questionnaire administered on the study that investigates the "Risk Factors and Effects of Low Back Pain among Nurses in Emergency Departments of Kwara State University Teaching Hospital, Ilorin, Kwara State". A total number of 111 nurses provided response to the questionnaire. The questionnaires were validated for completeness and appropriate responses. The section is divided into three sections; the demographic variables, research questions, test of hypothesis and discussion of findings. The analysis of data is done with the aid of Statistical Package for Social Sciences (SPSS) version 25.

Section A: Demographic Data Presentation

Table 1: Distribution of respondents by Gender

Gender	N	Percent (%)
Male	25	22.5
Female	86	77.5
Total	**111**	**100.0**

Table 1 presents the distribution of respondents by gender. It was revealed that 25(22.5%) of the respondents were males while 86(77.5%) were females. This indicates that majority of the participant of the study were females.

Age	N	Percent (%)
18 – 25 years	71	64.0
26 – 30 years	12	10.8
31 – 40 years	26	23.4
41 years and above	2	1.8
Total	**111**	**100.0**

Table 2: Distribution of respondents by Age

Table 2 presents the distribution of respondents by age. It indicates that 71(64.0%) were between the ages of 18 – 25 years, 12(10.8%) were between 26 – 30 years, 26(23.4%) were between 31 – 40 years and 2(1.8%) was 41 years and above. This implies that the majority of the participants of this study were between 18 – 25 years.

Ward	N	Percent (%)
EPU	36	32.4
O & G Emergency	37	33.3
Adult A/E	38	34.2
Total	**111**	**100.0**

Table 3: Distribution of Respondents by Ward

Table 3 presents the distribution of respondents by ward. It was indicated that 36(32.4%) were in EPU ward, 37(33.3%) were in O & G Emergency and 38(34.2%) were in Adult A/E ward.

Years of Working Experience	N	Percent (%)
Less than 1 year	33	29.7
1 – 5 years	44	39.6
6 – 10 years	29	26.1
11 – 20 years	5	4.5
21 – 30 years	0	0
31 years and above	0	0
Total	**111**	**100.0**

Table 4: Distribution of Respondents by Years of Working Experience

Table 4 presents the distribution of respondents by years of working experience. It was indicated that 33(29.7%) had less than 1 year of experience, 44(39.6%) had between 1 – 5 years of experience, 29(26.1%) had between 6 – 10 years of experience and 5(4.5%) had between 11 – 20 years of experience. Hence, the majority of the respondents had 1 – 5 years of experience.

Rank/Cadre	N	Percent (%)
Director of Nursing Service	0	0
Deputy Director of Nursing Service	3	2.7
Assistant Director of Nursing Service	5	4.5
Chief Nursing Officer	25	22.5
Assistant Chief Nursing Officer	0	0
Principal Nursing Officer, Senior Nursing Officer	26	23.4
Nursing officer 1	35	31.5
Nursing Officer 2	17	15.3
Total	**111**	**100.0**

Table 5: Distribution of Respondents by Rank/Cadre

Table 5 presents the distribution of respondents by rank/cadre. It was indicated that 3(2.7%) deputy director of nursing service participated in the study, 5(4.5%) assistant director of nursing service

participated, 25(22.5%) chief nursing officer participated, 26(23.4%) principal nursing officer, 35(31.5%) nursing officer 1 participated and 17(15.3%) nursing officer 1participated in the study.

Section B: Answer to Research Questions

Descriptive statistics of frequency counts and percentages was used to answer all research questions generated for the study.

Research Question 1: What is the prevalence rate of low back pain among nurses in the emergency department?

Table 6: Prevalence of Low Back Pain

		Level of Agreement						
		SA	**A**	**D**	**SD**	**Mean**	***Std***	**Overall %**
1	I experience low-back pain during and after my nursing shifts	51 (45.9%)	60 (54.1%)	0 (0%)	0 (0%)	3.54	.50	86.5%
2	I experience low-back pain more than once a week	48 (43.2%)	60 (54.1%)	3 (2.7%)	0 (0%)	3.41	.54	85.1%
3	I often feel the need to take pain relief medication due to low-back pain after work	60 (54.1%)	48 (43.2%)	3 (2.7%)	0 (0%)	3.51	.55	87.8%
4	I experience low-back pain after bending to assist patients	62 (55.9%)	46 (41.4%)	3 (2.7%)	0 (0%)	3.53	.55	88.3%
5	I experience discomfort while sleeping due to low-back pain	54 (48.6%)	54 (48.6%)	3 (2.7%)	0 (0%)	3.46	.55	86.4%
6	I experience low-back pain after prolonged sitting	51 (45.9%)	55 (49.5%)	5 (4.5%)	0 (0%)	3.41	.57	85.3%
7	I have had to take breaks during my shifts because of low-back pain	66 (59.5%)	45 (40.5%)	0 (0%)	0 (0%)	3.59	.49	89.9%
8	I have missed work due to my low-back pain	65 (58.6%)	41 (36.9%)	5 (4.5%)	0 (0%)	3.54	.58	88.5%
	TOTAL					**3.48**	**0.55**	**87.2%**

Decision Value: **Very Low** = 0 – 25; ***Low*** = 26 – 50, ***High*** = 51 – 75; ***Very High*** = 76 – 100

Table 6 shows the prevalence rate of low back pain among nurses in the emergency department. It was revealed from the table 6 that all the items received a percentage above average with "I have

had to take breaks during my shifts because of low-back pain" having the highest percentage score of 89.9% and "I experience low-back pain more than once a week" with lowest percentage score of 85.1. Based on the value of the Total percentage (87.3%) which falls within the decision value for ***Very High***, it can be inferred that the prevalence rate of low back pain among nurses in the emergency department Very High.

Fig. 1: Prevalence Rate of Low Back Pain

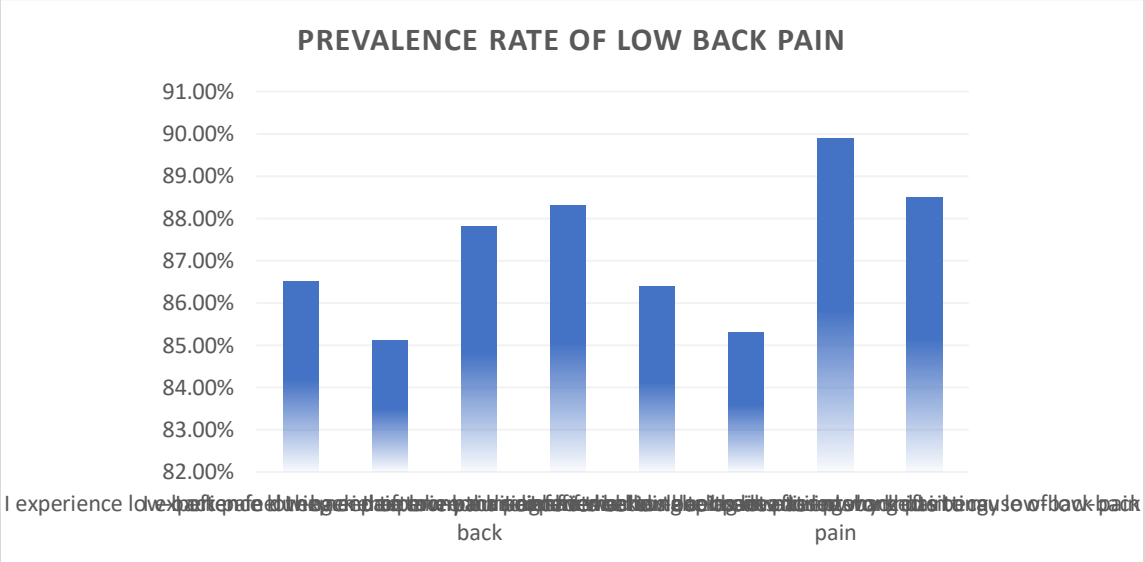


Fig. 1 indicates a prevalence rate of low back pain among nurses with 85.1% being the lowest percentage score and 89.9% being the highest percentage score.

Research Question 2: What are the risk factors contributing to the development of low back pain among nurses?

Table 7: Risk Factors Contributing to the Development of Low Back Pain among Nurses

	Items	Level of Agreement						
		SA	**A**	**D**	**SD**	**Mean**	***Std***	**Rank**
1	Prolonged standing/walking or when administering medication	60 (54.1%)	51 (45.9%)	0 (0%)	0 (0%)	3.54	.50	1st
2	Lifting and transferring patients between beds, wheelchairs, or stretchers	57 (51.4%)	45 (40.5%)	9 (8.1%)	0 (0%)	3.43	.64	3rd
3	Lack of adequate breaks during busy shifts, especially in emergency situations	36 (32.4%)	60 (54.1%)	15 (13.5%)	0 (0%)	3.19	.65	5th
4	Working long shifts, especially during night duty or overtime	60 (54.1%)	51 (45.9%)	0 (0%)	0 (0%)	3.54	.50	1st
5	Poor posture while administering injections or monitoring vital signs	52 (46.8%)	54 (48.6%)	5 (4.5%)	0 (0%)	3.42	.58	4th
6	Fatigue from insufficient rest or sleep due to consecutive shifts	40 (36.0%)	51 (45.9%)	20 (18.0%)	0 (0%)	3.18	.71	6th
7	Stress from managing multiple patients	23 (20.7%)	73 (65.8%)	15 (13.5%)	0 (0%)	3.07	.58	7th
8	Carrying heavy equipment, such as oxygen tanks or medical supplies during patient care activities	17 (15.3%)	38 (34.2%)	44 (39.6%)	12 (10.8%)	2.54	.88	8th
	TOTAL					**3.23**	**0.63**	

Table 7 shows the risk factors contributing to the development of low back pain among nurses. It was indicated that all items had above the benchmark of 2.5. According to Mean ranking, "working long shifts, especially during night duty or overtime" and "prolonged standing/walking or when administering medication" was ranked first with mean value of 3.54 while "carrying heavy equipment, such as oxygen tanks or medical supplies during patient care activities" was ranked 8th with mean value of 2.54.

Research Question 3: How does low back pain affect the psychological wellbeing of nurses working in the emergency department?

Table 8: **Effects of Low Back Pain on Psychological Wellbeing**

	Items	Level of Agreement						
		SA	**A**	**D**	**SD**	**Mean**	***Std***	**Rank**
1	I have experienced feelings of depression related to my lower back pain	16 (14.4%)	12 (10.8%)	65 (58.6%)	18 (16.2%)	2.23	.89	7th
2	I often feel frustrated	19 (17.1%)	70 (63.1%)	15 (13.5%)	7 (6.3%)	2.91	.74	1st
3	I feel less confident in my abilities	10 (9.0%)	12 (10.8%)	65 (58.6%)	24 (21.6%)	2.07	.82	6th
4	I feel more irritable at other nurses/workers	13 (11.7%)	50 (45.0%)	36 (32.4%)	12 (10.8%)	2.58	.83	3rd
5	I have difficulty in concentrating on my duties	21 (18.9%)	30 (27.0%)	50 (45.0%)	10 (9.0%)	2.56	.90	4th
6	I often feel less motivated to engage in daily activities	18 (16.2%)	48 (43.2%)	38 (34.2%)	7 (6.3%)	2.69	.81	2nd
7	I often feel anxious or worried	11 (9.9%)	37 (33.3%)	47 (42.3%)	16 (14.4%)	2.39	.85	5th
	TOTAL					**2.49**	**0.83**	

Table 8 shows responses on how low back pain affect the psychological wellbeing of nurses working in the emergency department. The mean analysis conducted revealed that the effects include: feeling of frustration (M=2.91), feeling less motivated to engage in daily activities (M=2.69), feeling more irritable at other nurses/workers (M=2.58) and have difficulty in concentrating on duties (M=2.56).

Research Question 4: What are the effects of low back pain on the performance of nurses in the emergency department?

Table 9: Effects of Low Back Pain on Performance

	Items	Level of Agreement						
		SA	**A**	**D**	**SD**	**Mean**	***Std***	**Rank**
1	I have difficulty completing the tasks assigned to me	16 (14.4%)	42 (37.8%)	43 (38.7%)	10 (9.0%)	2.58	.84	2nd
2	I cannot perform physical task such as assisting patients	6 (5.4%)	38 (34.2%)	55 (49.5%)	12 (10.8%)	2.34	.74	4th
3	I find it challenging to focus on my responsibilities	6 (5.4%)	30 (27.0%)	61 (55.0%)	14 (12.6%)	2.25	.74	7th
4	I often take breaks while I am at work	22 (19.8%)	57 (51.4%)	20 (18.0%)	12 (10.8%)	2.80	.88	1st
5	I often make mistakes while working	14 (12.6%)	19 (17.1%)	68 (61.3%)	10 (9.0%)	2.33	.81	5th
6	I have missed workdays	13 (11.7%)	33 (29.7%)	50 (45.0%)	15 (13.5%)	2.40	.86	3rd
7	I cannot collaborate and work effectively with my colleagues	9 (8.1%)	26 (23.4%)	67 (60.4%)	9 (8.1%)	2.32	.73	5th
	TOTAL					**2.43**	**0.80**	

Table 9 indicates the effects of low back pain on the performance of nurses in the emergency department. The mean analysis conducted revealed that the effects include: taking breaks often while I am at work (M=2.80) and having difficulty completing the tasks assigned to me (M=2.58).

Hypotheses Testing

Hypothesis One: *There is no significant relationship between the risk factors and prevalence of low-back pain among nurses in the emergency department*

Table 10: Pearson Product Moment Correlation (PPMC) analysis on relationship between the risk factors and prevalence of low-back pain among nurses in the emergency department

Variable	N	Mean	*SD*	Pearson Correlation	p-value	Decision
Risk factors		3.19	.55			
	111			.198	.037	Rejected
Prevalence of low-back pain		2.99	.51			

Sig. $p<0.05$

Table 10 shows the relationship between the between the risk factors and prevalence of low-back pain among nurses in the emergency department. The correlation coefficient (r) is 0.19; p-value is 0.03. The correlation coefficient of r= 0.19 indicates that there exists a low but positive relationship between the risk factors and prevalence of low-back pain among nurses. Also, the significant value of 0.03 is lesser than the critical alpha value of 0.05. Hence, the null hypothesis is rejected. Hence, significant relationship exists between the risk factors and prevalence of low-back pain among nurses in the emergency department.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

This chapter discusses the findings of the study as analyzed in chapter four based on the objectives and in relation to previous studies conducted. Answers are provided to the research questions in form of discussions and corresponding implication of the outcome to the nurses and nursing were appropriately elaborated. Recommendations and suggestions for further studies were also highlighted in this chapter. A total of 40 questionnaires were administered, they were retrieved and analyzed. The study identified the prevalence, risk factors and effects of low back pain on the performances and psychological wellbeing of nurses in the emergency departments.

5.1 Discussion of Findings

RESEARCH QUESTION 1: What is the prevalence and incidence rate of low back pain among nurses in the emergency department?

The prevalence of low back pain among nurses working in the emergency department was investigated in this study. This indicates that prevalence of low back pain among nurses in the emergency department was high. This indicates that participants frequently experience low-back pain during and after nursing shifts, particularly after bending to assist patients or prolonged sitting. They often need breaks, miss work, take pain relief medication, and struggle with discomfort while sleeping. Low-back pain occurs more than once a week for most participants. The result of the study by Almaghrabi et al. (2021) conducted amongst among nurses at King Abdulaziz University Hospital showed a prevalence rate of 82.9%. However, study by Sultana et

al. (2023) involving 191 nurses showed that the regular prevalence of low back pain was revealed to be 41.4%.

RESEARCH QUESTION 2: What are the risk factors contributing to the development of low back pain among nurses?

Question two identify the risk factors that contribute to the development of low back pain among nurses. Analysis result revealed that working long shifts, especially during night duty or overtime; prolonged standing/walking or when administering medication, lifting and transferring patients between beds, wheelchairs, or stretchers; poor posture while administering injections or monitoring vital signs; lack of adequate breaks during busy shifts, especially in emergency situations; fatigue from insufficient rest or sleep due to consecutive shifts and stress from managing multiple patients. This is quite dissimilar from the study findings of Jradi et al. (2020) which revealed that risk factors include years of experience, professional classification, the number of patients receiving direct care, work posture, carrying of heavy items or patients, self-reported knowledge of LBP, job satisfaction, and occupational stress.

RESEARCH QUESTION 3: What are the effects of low back pain on the delivery of care by nurses?

The study also assessed the effects of low back pain on the performance of nurses in the emergency department and found that taking breaks often while at work and having difficulty completing the tasks assigned were the major effects of low back pain on the performance of nurses in the emergency department. This implies that LBP contributes to diminished productivity and may compromise patient care if nurses are unable to perform their duties effectively. The result of this finding correlates with that of Olasupo et al (2023) whose study revealed that the effect of LBP on

duty performance has been shown to include the inability to care for patients as appropriate, absenteeism at work, intention to change workplace, and intention to quit the nursing profession. Furthermore, Moussa et al. (2015) found out nurses may be forced to quit their jobs or change their workplaces because of LBP.

RESEARCH QUESTION 4: How does low back pain affect the psychological wellbeing of nurses working in the emergency department?

Having examined the effect of low back pain on the psychological wellbeing of nurses in the emergency department, it was revealed that the major effects were feeling of frustration, feeling less motivated to engage in daily activities, feeling more irritable at other nurses/workers and have difficulty in concentrating on duties. This corroborates the study findings of Al-Mutairi (2019) which revealed that disruption of psychological functioning manifested through insomnia, irritability, anxiety, depression, and somatic complaints were psychological effects of low-back pain by respondents. The study by Tosunoz and Gursel (2020) also revealed that LBP leads to psychological distress, withdrawal, anxiety, loneliness, anger, and affecting the social status of patients.

RESEARCH HYPOTHESIS: There is no significant relationship between the risk factors and prevalence of low-back pain among nurses in the emergency department

The null hypothesis tested in this study revealed that there was significant relationship between the risk factors and prevalence of low-back pain among nurses in the emergency department. This implies that factors such as prolonged standing, lifting, poor posture, and inadequate rest directly contribute to the high incidence of low back pain among nurses. The significant relationship emphasizes the need to address these work-related conditions as part of preventive and management strategies. It also indicates that without interventions to mitigate these risk factors,

the prevalence of low back pain will likely remain high, potentially leading to decreased job performance. This is in tandem with the research made by Swathi et al. (2022) that activities contribute to the development of LBP by weakening the muscles that support the spine and reducing overall physical fitness. Also, Sihawong et al. (2016) highlighted that office workers who engage in minimal physical activity are at a higher risk of developing chronic low back pain.

5.2 Limitations of the Study

1. The study did not explore the coping mechanisms in management of LBP among nurses.
2. This study did not investigate other potential contributors to low back pain, such as nurse-patient ratios, department-specific challenges, or workplace culture
3. The sample size used in this study may not have been large enough to ensure the generalizability of the results to a broader population of nurses.

5.3 Implication of Findings to Nursing

1. The high prevalence of low back pain (LBP) indicates a pressing need for healthcare institutions to prioritize occupational health and safety.
2. The identification of specific risk factors highlights the need for tailored interventions such as revising nurse scheduling practices to avoid consecutive long shifts and provide training on proper body mechanics.
3. Low back pain's impact on nurses' psychological well-being suggests that healthcare institutions should provide mental health support for nurses.
4. The performance issues related to frequent breaks and difficulty completing tasks due to LBP necessitate changes in workload management.
5. The confirmation of a significant relationship between risk factors and LBP prevalence emphasizes the need for data-driven policy adjustments.

5.4 Summary of the Findings

Low back pain (LBP) is a widespread public health issue that affects a significant portion of the global population, Nurses, in particular, are at a higher risk of developing LBP due to the nature of their work, which involves prolonged standing, lifting patients, and sustaining poor posture during care. This condition is exacerbated by factors such as long work hours, stress, and insufficient rest, making nursing one of the professions most vulnerable to LBP. Despite its prevalence, there is limited understanding of the specific risk factors that contribute to LBP among nurses, particularly in developing nations. This study therefore highlights the prevalence, risk factors and effects of LBP in emergency department nurses, which could assist policymakers in implementing strategies to reduce the occurrence of LBP and encourage nurses to adopt preventive measures to mitigate its impact.

The first chapter proceeded to discussing research problems, objectives of the study, research questions, research hypothesis, significance of the study, scope of the study and operational definition of terms. Literatures were reviewed in chapter two amongst which are concept of low-back pain, risk factors for low back pain, effects of low back pain. This segment is not devoid of empirical reviews and a theoretical framework that guides the study.

Chapter three discusses the methodology applied in this study. It encompasses the research design, setting of the study, population, sample size, sampling techniques, instrument for data collection, reliability of the instrument, method of data analysis and ethical consideration. The study is a descriptive research of the survey type that used questionnaire as instrument of data collection. The result obtained from data analysis was present in tables in Chapter four. The results revealed the aims of the study which is risk factors and effects of low back pain among nurses in the emergency departments of Kwara State University Teaching Hospital Ilorin, Kwara State.

Conclusion

Conclusively, the study highlights the high prevalence of low back pain among nurses in the emergency department of Kwara State University Teaching Hospital. The identified risk factors, such as prolonged standing, poor posture, and fatigue from inadequate rest, contribute to the condition, although no significant relationship was found between these factors and LBP prevalence. The effects of LBP extend beyond physical discomfort, affecting nurses' psychological wellbeing and job performance. These findings stress the need for effective workplace strategies to address LBP and improve the overall wellbeing and efficiency of nurses in high-stress environments like emergency departments.

Recommendations

The following recommendations were made from the results obtained in this study.

1. Nurses should engage in regular physical exercises focused on strengthening core muscles to prevent and manage low back pain.
2. The hospital management should implement ergonomic interventions to reduce the physical strain nurses experience, such as adjustable equipment, proper training on lifting techniques, and more frequent rest breaks, especially during long or consecutive shifts.
3. Health policy makers should develop guidelines that limit the length of shifts and ensure adequate staffing in emergency departments to minimize the risk of fatigue-related LBP and enhance nurse productivity.
4. The hospital's occupational health team should conduct routine assessments and early interventions for nurses experiencing low back pain to prevent chronic conditions and ensure better work performance.

Suggestions for Further Studies

1. Future studies could explore the role of psychological stress and coping mechanisms in the development and management of low back pain among nurses.
2. Future research could examine other potential factors contributing to low back pain, such as nurse-patient ratios, department-specific challenges.
3. Larger number of respondents should be considered in other studies as a means to ensure generalization of results.

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VAPPENDIX

RESEARCH QUESTIONNAIRE

RISK FACTORS AND EFFECTS OF LOW BACK PAIN AMONG NURSES IN EMERGENCY DEPARTMENTS OF KWARA STATE UNIVERSITY TEACHING HOSPITAL, ILORIN, KWARA STATE

Introduction:

Dear Respondents,

I am conducting research on the risk factors and effects of low back pain among nurses in emergency Departments of Kwara State University Teaching Hospital, Ilorin, Kwara State. Your responses will be used exclusively for this study and academic purposes and will remain confidential. I greatly appreciate your honest and thoughtful participation.

Thank you,

ADENIGBA E.O.

Instruction: Please kindly fill or tick [√] the appropriate answers where appropriate

SECTION A: DEMOGRAPHIC DATA

1. Gender: Male [ ] Female [ ]
2. Age Range: (a) 18 – 25 years [ ] (b) 26 – 30 years [ ] (c) 31 – 40 years [ ]
   (d) 41 years and above [ ]
3. Ward: (a) EPU [ ] (b) O & G Emergency [ ] (c) Adult A/E [ ]
4. Years of working experience: (a) less than 1 year [ ] (b) 1 – 5 years [ ]
   (c) 6 – 10 years [ ] (d) 11 – 20 years [ ]
   (e) 21 – 30 years [ ] (f) 31 years and above [ ]
5. Rank/Cadre: (a) Director of Nursing Service [ ]
   (b) Deputy Director of Nursing Service [ ]
   (c) Assistant Director of Nursing Service [ ]
   (d) Chief Nursing Officer [ ]
   (e) Assistant Chief Nursing Officer [ ]
   (f) Principal Nursing Officer, Senior Nursing Officer [ ]
   (g) Nursing officer 1 [ ]
   (h) Nursing Officer 2 [ ]

SECTION B: RISK FACTORS FOR LOW BACK PAIN

Kindly tick (√) the option in front of each item that is most applicable to you from section B, using the keys below. They are: SA --Strongly Agree, A --Agree, D ---Disagree and SD ---- Strongly Disagree

S/N	Items	SA	A	D	SD
8	Prolonged standing/walking or when administering medication				
9	Lifting and transferring patients between beds, wheelchairs, or stretchers				
10	Lack of adequate breaks during busy shifts, especially in emergency situations				
11	Working long shifts, especially during night duty or overtime				
12	Poor posture while administering injections or monitoring vital signs				
13	Fatigue from insufficient rest or sleep due to consecutive shifts				
14	Stress from managing multiple patients				
15	Carrying heavy equipment, such as oxygen tanks or medical supplies during patient care activities				

SECTION C: PREVALENCE OF LOW BACK PAIN

Kindly tick (√) the option in front of each item that is most applicable to you from section C, using the keys below. They are: SA --Strongly Agree, A --Agree, D ---Disagree and SD ---- Strongly Disagree

S/N	Items	SA	A	D	SD
16	I experience low-back pain during and after my nursing shifts				
17	I experience low-back pain more than once a week				
18	I often feel the need to take pain relief medication due to low-back pain after work				
19	I experience low-back pain after bending to assist patients				
20	I experience discomfort while sleeping due to low-back pain				
21	I experience low-back pain after prolonged sitting				
22	I have had to take breaks during my shifts because of low-back pain				
23	I have missed work due to my low-back pain				

SECTION D: EFFECTS OF LOW BACK PAIN ON PHYCHOLOGICAL WELLBEING

Kindly tick (√) the option in front of each item that is most applicable to you from section D, using the keys below. They are: SA --Strongly Agree, A --Agree, D ---Disagree and SD ---- Strongly Disagree

S/N	Due to the low-back pain:	SA	A	D	SD
24	I have experienced feelings of depression related to my lower back pain				
25	I often feel frustrated				
26	I feel less confident in my abilities				
27	I feel more irritable at other nurses/workers				
28	I have difficulty in concentrating on my duties				
29	I often feel less motivated to engage in daily activities				
30	I often feel anxious or worried				

SECTION E: EFFECTS OF LOW BACK PAIN ON PERFORMANCE

Kindly tick (√) the option in front of each item that is most applicable to you from section E, using the keys below. They are: SA --Strongly Agree, A --Agree, D ---Disagree and SD ---- Strongly Disagree

S/N	Due to the low-back pain:	SA	A	D	SD
31	I have difficulty completing the tasks assigned to me				
32	I cannot perform physical task such as assisting patients				
33	I find it challenging to focus on my responsibilities				
34	I often take breaks while I am at work				
35	I often make mistakes while working				
36	I have missed workdays				
37	I cannot collaborate and work effectively with my colleagues				