

# RADIOGRAPHY REALITIES: NAVIGATING LOW BACK PAIN CHALLENGES IN NIGERIA

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**Abstract:** Low back pain (LBP) stands as a prevalent and impactful issue affecting the global working population, with 70 to 85% experiencing at least one episode during their lifetime. This study delves into the underexplored realm of LBP among Nigerian radiographers, a group facing unique challenges within their occupation. The research aims to elucidate the prevalence of LBP within this specific demographic and explore coping strategies employed by radiographers in Nigeria.

The literature underscores a multifaceted etiology of LBP, with factors such as gender, age, obesity, body height, occupation, posture, sedentary lifestyle, prolonged standing, psychosocial profile, workplace physical demands, social support, and pain perception contributing to its occurrence. Hospital workers, including radiographers, are particularly susceptible, encountering heightened rates of LBP due to the physical and emotional strains inherent in their roles. Stress, a prevalent occupational factor, has been identified as a significant contributor to LBP among hospital workers.

While numerous studies have scrutinized the prevalence and risk factors of LBP among certain occupational groups, there remains a significant gap in the literature concerning Nigerian radiographers. Existing research has primarily focused on Caucasian radiographers, leaving a dearth of knowledge regarding the unique challenges faced by their Nigerian counterparts. This study seeks to bridge this gap and contribute valuable insights into the prevalence and coping mechanisms related to LBP in the specific context of Nigerian radiographers.

The research methodology involves a comprehensive survey administered to a representative sample of Nigerian radiographers, encompassing various demographics and professional backgrounds. The survey will encompass questions related to the prevalence of LBP, associated risk factors, and coping strategies employed by radiographers in Nigeria. Statistical analyses will be employed to discern patterns and correlations within the data, providing a nuanced understanding of the LBP landscape among Nigerian radiographers.

The findings from this study aim to inform healthcare policies, workplace interventions, and educational initiatives targeted at mitigating LBP among radiographers in Nigeria. By identifying prevalent risk factors and effective coping strategies, the study contributes to the development of tailored interventions to alleviate the burden of LBP within this occupational group.

**Keywords:** Low Back Pain, Radiographers, Prevalence, Coping Strategies, Occupational Health

## INTRODUCTION

Low back pain (LBP) is a major cause of disability, working population. Among adults in the general hospitalization and employee absenteeism among the population, 70 to 85% were believed to experience at least

one episode of low back pain at some time during their lives (Anderson, 1999; Rublin, 2007). Low back pain is associated with several risk factors, including gender, age, obesity, body height, occupation, posture, sedentary lifestyle, standing for a long time, psychosocial profile, physical demands of the workplace, social support, obesity, and pain perception (Wong et al., 2010; Verbeek, 2010; Moussa et al., 2015). Hospital workers were reported to have higher rates of LBP compared to the general population due to physical and emotional factors involved in their occupation, such as stress (Beija et al., 2005; Laundry, et al., 2008). Several studies have focused on the prevalence and risk factors of low back pain among Caucasian radiographers (Wright and Witt, 1993; Lorusso, et al., 2007). There is however, paucity of studies on the prevalence of low back pain and coping strategies among Nigerian radiographers hence this study.

## **MATERIALS AND METHODS**

The study adopted the cross-sectional descriptive survey design. A total of 62 radiographers in clinical practice in Enugu and Ebonyi states, South-east, Nigeria were enlisted into the study. The instrument for data collection was a researcher-developed structured questionnaire. The questionnaire consists of section A, B and C. Section A elicited information on demographic data and number of years in employment while section B sought data on the various tasks performed by the radiographers and extracurricular activities. Section C was on respondents' experience of low back pain. It sought to determine; if the respondents were suffering from low back pain, if they ever had low back pain, the suggested risk factors, if they were hospitalized due to low back pain and if they had changed duties due to low back pain. Others were if they had low back pain in the last one year, if their work and leisure activities had reduced due to low back pain, if they think that extracurricular activities had caused them low back pain, if they had seen any health professional because of low back pain, and the coping mechanisms. The questionnaire was validated by five experts in the Departments of Medical Radiography and Medical Rehabilitation. The reliability was conducted using test re-test. The internal consistency was calculated using Cronbach's alpha which yielded a co-efficient of 0.81. The questionnaires were personally administered to the respondents by the researchers. Data were subjected to descriptive statistics and analyzed using Chi square. Probability value of  $p < 0.05$  was considered statistically significant.

## **RESULTS**

**Body weight changes** A total of 62 questionnaires were administered and 55 copies were properly completed and returned giving a return rate of 88.7%. Majority (72.7%) of the respondents were males while 27.3% were females. Most of the respondents (56.4%) were within the age range of 31 to 40 years and majority (81.8%) was married. A greater number of the respondents (89.1%) had their weights range from 71 to 80 kg. Most of the respondents (59.5%) had worked for over 10 years as clinical radiographers. A greater number (69.1%) had B.Sc. as the highest qualification (Table 1). From Table 2, a little above half of the respondents (50.9%) were experiencing low back pain at the time of the study and 90.9% have had low back pain in the last one year. However, only 3.6% of the respondents had been hospitalized due to low back pain. Among 90% of the respondents, there has been reduced activity while 27.3% had changed duty due to low back pain. A small number of the respondents (18.2%) reported that low back pain was responsible for the reduction in their extracurricular activities but only 7.3% of them had seen a doctor or physiotherapist in the last one year. Table 3 showed that the respondents considered 'standing and walking throughout the procedure', manipulation of equipment during procedure', 'pushing and pulling of equipment', 'repositioning patient/cassette during procedure' and 'bending while carrying out the procedure' as the greatest contributors of low back pain. The coping strategies adopted by

the respondents from Figure 1 were; 'sitting and resting after few hours of work' (83.6%), 'standing after few hours of sitting down' (61.8%), 'use of over-the-counter analgesics' (69.1%) and 'mild to moderate physical exercise' (49.1%).

## DISCUSSION

Radiographers have been reported in literature to suffer low back pain due to the physical nature of their jobs (Wright and Witt, 1993; Lorusso, *et al.*, 2007, Okeji, *et al.*, 2015). Our study revealed the major causes of LBP among radiographers to be; standing and walking throughout the procedure, manipulation of equipment during procedure, pushing and pulling of equipment, repositioning of patients/cassettes during procedure and bending while carrying out the procedure. Low back pain was found from our study to be associated with age ( $p < 0.05$ ). This may be due to the degenerative changes of the intervertebral disc occasioned by strenuous physical activities over the years.

This finding is similar to those of previous studies (Wong, *et al.*, 2010; Freburger, *et al.*, 2009). It is also in agreement with the document of National Institute of Arthritis and musculoskeletal and Skin Disease where age was reported as a risk factor. In this study, 'years of practice' was associated with LBP ( $p < 0.05$ ). This may not be unconnected with repetitive stress injury especially to the spine due to lifting of patients, long standing, bending, long sitting and twisting in the course of manipulating the equipment. This is in agreement with the document of National Institute of Arthritis and musculoskeletal and Skin Disease (NIAMSD, 2012) and a study by Karahan *et al.*, (2009). Gender was associated with LBP in our study ( $p <$

0.05). More females suffered LBP than the males. This is in agreement with the findings of earlier studies (Wong, *et al.*, 2010; Moussa, *et al.*, 2015; Karahan *et al.*, 2009). This could be explained by the fact that all the female respondents in our study were married and pregnancy may have contributed to the episodes of LBP. Majority of our respondents (90.9%) had suffered LBP in the past but only 3.6% had been hospitalized due to LBP. Also, a small percentage had seen a doctor or a physiotherapist due to LBP. This indicates that radiographers may have adapted or devised coping strategies in order to retain their jobs. On coping strategies adopted by radiographers, majority (83.6%) preferred sitting and resting after few

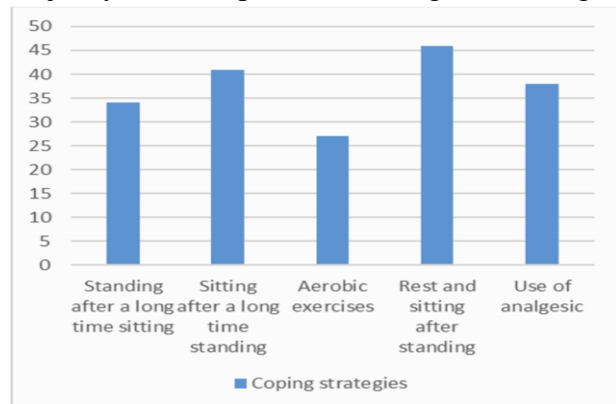


Figure 1: Coping strategies adopted by the respondents hours of work. Others adopt standing after few hours of sitting down (61.8%), use of over-the-counter analgesics (69.1%) and mild to moderate physical exercise (49.1%).

## CONCLUSION

Low back pain is a common debilitating disorder among Nigerian radiographers. The severity varies with age, gender and work history. Most of the risk factors are related to the physical activities engaged during routine

Table 1: Demographic characteristics of the respondents: n = 55

Characteristics	N (%)	p value
Sex		
Males	40 (72.7)	0.03
Females	15 (27.3)	
Age of respondents (years)		
< 30	10 (18.2)	0.01
31 – 40	31 (56.4)	
41 – 50	9 (16.4)	
> 50	5 (9.1)	
Marital status (males)		
Single	6 (17.5)	0.12
Married	33 (82.5)	
Marital status (females)		
Single	0 (0)	
Married	15 (100)	
Body weight (kg)		
60 – 70	4 (7.3%)	0.07
71 – 80	49 (89.1%)	
81 and above	2 (3.6%)	
Years of practice		
0 – 5	9 (11.9%)	0.02
6 – 10	15 (28.6%)	
>10	31 (59.5%)	
Highest Educational Qualification		
DCR	2 (3.6%)	0.24
B.Sc.	38 (69.1%)	
M.Sc.	14 (25.5%)	
Ph.D.	1 (1.8%)	

work. Radiographers should adopt preventive measures such as period of rest in-between duties, engaging hospital orderlies to assist with lifting heavy patients and periodic moderate exercise to mitigate the LBP.

### CONFLICT OF INTEREST

The authors have no conflict of interest.

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