

*Full Length Research Paper*

# **Low Back Pain Among Practicing Radiographers in a Nigerian Population and their Coping Mechanisms**

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**Low back pain (LBP) affects majority of the population but common among workers. It affects diagnostic radiographers mainly due to occupational physical activities and age. This study sought to determine the prevalence, risk factors and coping mechanisms among practicing radiographers in Enugu and Ebonyi States, Nigeria. Cross sectional survey was adopted using a structured questionnaire and the data analyzed using Chi square. A total of 50.9% of the respondents were experiencing LBP and 90.9% have had LBP in the last one year. Only 3.6% of the respondents had been hospitalized due to LBP. Majority (90%) of the respondents had reduced activity while 27.3% had changed duty due to LBP. A small number of the respondents (18.2%) reported that LBP was responsible for decrease in their extracurricular activities but only 7.3% of them had seen a doctor or a physiotherapist in the last one year. 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 major risk factors. Coping strategies adopted were; sitting and resting after few hours of work, standing after few hours of sitting down, use of over-the-counter analgesics and mild to moderate physical exercise to alleviate the LBP.**

**Key words:** Low back pain, radiographers, risk factors, coping strategies, Nigeria.

## **INTRODUCTION**

Low back pain (LBP) is a major cause of disability, hospitalization and employee absenteeism among the

working population. Among adults in the general population, 70 to 85% were believed to experience at

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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



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%)	

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



**Table 2.** Impact of low back pain on health and working history

Questions	Ans (%)
Do you currently suffer low back pain?	Yes (50.9%)
	No (49.1%)
Have you been hospitalized due to low back pain?	Yes (3.6%)
	No (96.4%)
Have you had low backpain in the last one year?	Yes (90.9%)
	No (9.1%)
Has low back pain caused you to reduce work activity?	Yes (90%)
	No (10%)
Have you ever changed duty due to low back pain?	Yes (27.3%)
	No (72.7%)
Has low back pain caused you to reduce your leisure in the last one year?	Yes (45.5%)
	No (54.5%)
Do you think extracurricular activities caused you low back pain?	Yes (18.2%)
	No (81.8%)
Have you seen a doctor or a physiotherapist for low back pain in the last one year?	Yes (7.3%)
	No (92.7%)

**Table 3.** Possible risk factors of LBP according to the respondents

Pushing and pulling of equipment	72.7%
Bending while carrying out procedure	70.9%
Wearing lead apron during procedure	34.5%
Twisting while carrying out procedure	27.3%
Standing and walking throughout the procedure	80%
Re-positioning patient/cassette during procedure	72%
Transfer patient unto couch with or without aide	67.3%
Sitting while scanning or during image acquisition	63.6%
Manipulation of equipment during procedure	76.4

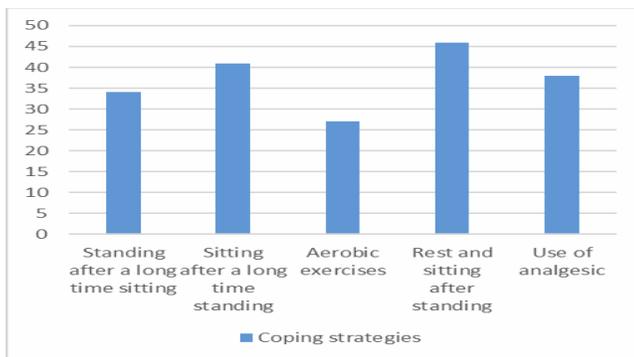


Figure 1: Coping strategies adopted by the respondents



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 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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