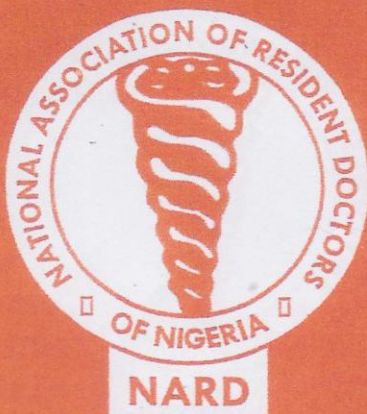


NIGERIAN JOURNAL *of* MEDICINE

www.nigerianjournalofmedicine.com

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Jan. - March, 2015

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AN INTERNATIONAL PEER REVIEWED

PUBLISHED BY THE NATIONAL ASSOCIATION OF NIGERIAN RESIDENT DOCTORS OF NIGERIA
MEDICAL JOURNAL

JOB-RELATED RISK FACTORS FOR LOW BACK PAIN IN ADULTS ATTENDING A TERTIARY HOSPITAL IN UYO, NIGERIA.

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ABSTRACT

Background: Low back pain is a common musculoskeletal disorder. However, there is very little information about low back pain in the general population in developing Countries. This study was aimed at identifying the job-related risk factors for low back pain in adults attending the General Out-patient Clinic of the University of Uyo Teaching Hospital, Uyo, Nigeria.

Methods: A cross-sectional study design was utilized. A structured questionnaire was used to obtain information from Four Hundred (400) consenting adults aged 18 years and above, attending the General Out-patient Clinic of University of Uyo Teaching Hospital from May 2011 to July 2011. The data obtained was analyzed using Epi Info statistical software version 3.2.2

Results: The mean age of the subjects was 38 ± 14.2 years. There were 176 male subjects and 224 female subjects in ratio 1:1.3. The prevalence of low back pain was 31%. Statistically significant job-related risk factors were heavy lifting activity ($X^2 = 27.52, P = 0.0001$) and stressful jobs ($X^2 = 29.57, P < 0.0001$). Low job satisfaction ($X^2 = 1.22, P = 0.26$) and prolonged sitting or bending ($X^2 = 0.28, P = 0.50$) were not statistically significant.

Conclusion: This study showed that stressful jobs, and jobs involving heavy lifting activity are significantly associated with low back pain. Health education on proper lifting techniques and the reduction of stress at work should be encouraged.

Keywords: Job, Risk factors, Low back pain, Adult, Uyo.

NigerJMed2015: 42-46

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INTRODUCTION

Low back pain is a common musculoskeletal disorder. It is a considerable problem affecting people in the developed and developing countries.¹ However, there is little information about low back pain in the general population in developing countries. Some authors have suggested that scarcity of reports from developing countries may be due to the fact that low back pain pales in comparison to other health problems.²

A number of studies have attempted to identify the risk factors for low back pain especially with respect to Job-related tasks.^{3,4,5} Low back pain is the commonest cause of occupational disability in industrialized societies and is the type of pain which general practitioners have to contend with most frequently. One study investigated the relationship between lifting at the work place and subsequent musculoskeletal pain

syndromes.⁴ The study reported an association between occupational activities and musculoskeletal symptoms, which were specific for activity type and the skeletal site involved. Jacob and colleagues also identified the specific factor of high occupational activity such as lifting and loading, as contributory to low back pain in the general population.⁵ Sanya, Omokhodion and Ogwumike⁶ in a cross-sectional study of risk factor for low back in a multidimensional job-related environment (Hospital), identified job task involving lifting, bending as well as prolonged stay in one position as risk factors for low back pain. The highest report of low back pain was among individuals who were involved in physical activities such as lifting.

Psychosocial factors related to work such as high work stress and low job satisfaction have been linked to low back pain.^{4,7} It has been hypothesized that exposure to suboptimal psychosocial factors may lead to altered spinal loading due to increased muscle tension.⁸ The consequences and prognosis of low back pain could also be influenced by psychosocial factors, for example pain that under optimal circumstances would be tolerated by workers, may in a stressful psychosocial environment lead to injury reporting due to decreased pain tolerance. One review of 46 articles published

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between 1973 and 1992 dealing with psychosocial factors at work as risk factors for low back pain concluded that even though the overall picture was unclear, an association had been shown between low back pain and severe psychosocial job variables.⁶ A prospective cohort study by Hoogendoorn, Bongers, Wde- Vet, Ariens and van Mechelen⁷ concluded that psychosocial factors related to work such as low job satisfaction was a risk factor for low back pain. In one study among professional cooks in school lunch services in Japan, it was concluded that there was an association between high work stress, low job satisfaction and the risk of low back pain.⁷

The foregoing shows that work and work environment significantly affect the health status of the individual. Therefore, this study is aimed at identifying the job-related risk factors for low back pain in adults attending the General Out-patient Clinic of University of Uyo Teaching Hospital, Uyo.

METHODS

This was a cross-sectional, hospital-based study that was conducted at the General Out-patient Clinic of the University of Uyo Teaching Hospital, Uyo, Nigeria from May 2011 to July 2011. A total of 400 subjects aged 18 years and above were selected for the study using systematic sampling technique. The first subject was randomly selected while subsequent selection of subjects was based on a pre-determined sampling interval. The study was approved by the Research and Ethical committee of the University of Uyo Teaching Hospital. Written informed consent was obtained from the subjects after explaining the nature and objective of the study to them. All consenting adults aged 18 years and above were included in the study while non-consenting subjects, those less than 18 years and very ill patients were excluded. Each subject was administered a semi-structured questionnaire which sought information on socio-demographic characteristics, the presence or absence of low back pain, work stress, heavy lifting activity, prolonged sitting or bending, low job satisfaction, duration of low back pain and work absenteeism due to low back pain.

Data entry and analysis was done using Epi Info statistical software version 3.2.2 (CDC Atlanta, Georgia, USA).¹⁰ The means, frequencies and statistical association of variables were ascertained

RESULTS

Four hundred subjects were recruited for the study. The socio-demographic characteristics of the study subjects is shown in table 1. There were 176 (44%) male and 224 (56%) female subjects in the study population with male to female ratio of 1:1.3. The mean \pm standard

deviation of the subjects age was 38 ± 14.2 years.

The prevalence of low back pain was 31.0%. The prevalence was high among men compared to women (34.7% versus 28.1%) but was not statistically significant ($X^2 = 1.97, P = 0.16$).

The job-related risk factors for low back pain in the study subjects is shown in table 2. A total of seventy-eight (44.8%) out of one hundred and seventy-four subjects whose job involved heavy lifting activity had low back pain compared to forty-six (20.4%) out of two hundred and twenty-six subjects whose job did not involve heavy lifting activity but also had low back pain. This was statistically significant ($X^2 = 27.52, P < 0.0001$). One hundred and twenty-three (31.1%) of subjects whose job involved prolonged sitting or bending had low back pain compared to 20% of the subjects whose job did not involve heavy lifting but also had low back pain. This was not statistically significant ($X^2 = 0.29, P = 0.59$). Twelve (40%) subjects who were satisfied with their jobs had low back pain compared to 30.3% of the subjects who were not satisfied with their jobs but also had low back pain. This was also not statistically significant ($X^2 = 1.23, P = 0.26$). A significant proportion (42%) of subjects who had stressful jobs had low back pain compared to 16.7% of subjects who do not have stressful jobs but also had low back pain. This was statistically significant ($X^2 = 29.57, P < 0.0001$).

The frequency of low back pain according to duration in the subjects is shown in table 3. A higher proportion (52.4%) of the study subjects had chronic (>12 weeks) low back pain.

The frequency of work absenteeism in subjects with low back pain is also shown in table 3. Majority (87.9%) the subjects with low back pain were not absent from work. Absenteeism from work due to low back pain was low (12.1%).

DISCUSSION

This study showed that Job-related factors (Heavy lifting activity and Stressful job) were statistically associated with low back pain.

Subjects who engaged in heavy lifting activity had a higher prevalence of low back pain than those who did not engage in heavy lifting activity. This was in agreement with reports from other studies.^{4,5} According to these studies, heavy lifting activity was identified as a risk factor for low back pain. It is not known for sure whether any study has reported a contrasting relationship between low back pain and heavy lifting activity. None of the previous studies on

Low back pain reviewed during the course of this work disputed the significant association between low back pain and heavy lifting activity.

Subjects who had stressful jobs reported a higher prevalence of low back pain compared to those who did not have stressful jobs. A study by Miwako et al⁷ also reported high job stress to be significantly associated with low back pain. Though it remains unclear how stressful jobs can result in low back pain, none of the reviewed study on low back pain disputed this association.

Prolonged sitting or bending was not associated with low back pain in this study. This was in contrast to the finding by Sanya, Omokhodion and Ogwumike³ who reported that prolonged bending as well as prolonged sitting were risk factors for low back pain.

Low job satisfaction was also not associated with low back pain in this study. This was in contrast to reports from other studies^{7,8} which found low back pain to be significantly associated with low job satisfaction. This disparity may be due to difference in the level of education and/or occupational status of subjects in this study and previous studies. Again the lack of association of low job satisfaction with low back pain in this study may be due to fear in the study subjects of being reported to their employers. Therefore, subjects may report that they are satisfied with their job when in fact the contrary is the case.

Subjects who reported chronic low back pain in this study were more than those that with acute low back pain. This was in line with the report from a cross-sectional study of low back pain in a rural community

in South-West Nigeria.¹¹ In the study, majority of the subjects had chronic low back pain lasting up to 12 months while only a minority had acute low back pain. Low back pain may worsen over time becoming a chronic condition.

In this study, 12.1% of the subjects who reported low back pain were absent from work due to their pain. Omokhodion and Sanya reported sickness absence of 5% among their study population. Another study of risk factors for low back pain among hospital workers in Ibadan reported absenteeism rate of 8.1%.³ These rates are low compared to rates from industrialized countries. This shows that low back pain as a cause of sickness absence pales into insignificance in a population like ours where the major disease burden is due to infectious diseases such as malaria, HIV/AIDS, Respiratory tract infection and diarrhoeal diseases. Furthermore, in Nigeria, unlike in the industrialized countries, there are no sick pay schemes requiring medical certification for low back pain. As such workers go to work if their pain does not significantly interfere with daily function.

This is a hospital-based study. There is need for a community-based study with an objective assessment of low back pain to be carried out in this and other communities.

In conclusion, this study has shown that stressful jobs, and jobs involving heavy lifting activity are associated with low back pain. There is need to educate and/or counsel people on safe/proper lifting techniques. There is also need to advocate for modification / removal of stressors in work environment in order to reduce stress at work among employees.

Table 3: Duration of low back pain and absenteeism from work in affected study subjects

Variable	Frequency	Percentage (%)
Duration of low back pain		
Acute (<12 weeks)	59	47.6
Chronic (>12 weeks)	65	52.4
Total	124	100
Absent from work		
Yes	15	12.1
No	109	87.9
Total	124	100

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