Prevalence of low back pain and associated factors among office workers in Kano city, Nigeria

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ABSTRACT

Background: Many studies across the globe have reported the prevalence of low back pain (LBP) among office workers. This study aimed to find out the prevalence of LBP and associated factors among office workers in Kano city, Nigeria.

Methods: A cross-sectional type of study was conducted among the office workers in Kano metropolitan from September to December 2019. A total of 300 office workers were selected using a convenience sampling technique. The data was collected from the respondents by face-to-face interview technique using a semi-structured questionnaire and all the data collected were analyzed using statistical software (SPSS version 22.0).

Results: In this study, the mean age of the respondents was 38.6±9.6 years and 72.7% of them were male. More than half (54.7%) of the respondents had a bachelor's degree and above. About 71.3% of the respondents had a familial history of LBP. About 68.0% of the respondents had suffered musculoskeletal disorder in the past and the majority (54.4%) mentioned they suffered hip pain. Only 33.7% of the respondents were maintaining the proper posture and 37.7% of the respondents were using an ergonomic chair.

Conclusions: The findings of this study found a 65.3% prevalence of low back pain among the office workers in Kano metropolitan. Office workers should be encouraged to maintain proper postures at work and there is a need for more educational programs regarding the prevention measures of low back pain.

Keywords: Low back pain, Office workers, Occupational health, Kano
INTRODUCTION

Low back pain (LBP) is among the most common causes of musculoskeletal disorders related to work status and condition.\(^1\) It was estimated that about 80.0% of the general population will experience a back problem at some time in their lives.\(^2\) LBP can induce a lack of mental unrest, enthusiasm as well as physical discomfort.\(^3\) It was reported that among the working population, the LBP became a significant cause of taking sick leave as well as early retirement.\(^4\) LBP has been recognized as one of the major causes for decreased efficiency and well-being in the working populace.\(^5\) Office workers are characterized to spend a substantial amount of time sitting at a desk. Many studies have shown different levels of the prevalence of LBP among office workers.\(^6\) The prevalence of LBP in high-income countries was found to be lower than that of low-income countries.\(^11\)

LBP was reported to account for an average number of disability-adjusted life years (DALYs) higher than road injuries, chronic obstructive pulmonary disease (COPD), HIV, tuberculosis, lung cancer and preterm birth complications.\(^12\) In 1990, LBP was estimated to contribute around 58.2 million DALYs to the global burden of disease, ranking it as the 11th leading global contributor to years lost from premature mortality or years lived in ill health. Later in 2010, LBP was ranked as the sixth leading contributor to overall disease burden, with an estimation of about 83 million DALYs.\(^13\) Numerous studies have been conducted across the globe to evaluate the social and economic impact of LBP. A study conducted in the United Kingdom reported LBP as the most common cause of disability in young adults, with above 100 million workdays lost per year.\(^14\) It was estimated that close to 150 million workdays are lost every year because of LBP in the United States.\(^14\)\(^15\) This study aimed to find out the prevalence of LBP and associated factors among office workers in Kano city, Nigeria.

METHODS

Study setting and period

This study was carried out in Kano metropolitan, a capital city of Kano state in the North-West zone of Nigeria. It is the commercial nerve center of Northern Nigeria as well as the second largest city all over the country. The study was conducted for a period of three months (September to December 2019).

Study design, population and selection criteria

This was a descriptive cross-sectional study conducted in Kano metropolitan in the North-Western part of Nigeria. The study populations were all the office workers (such as healthcare providers, bankers, teachers, legal practitioners, business administrators, offices secretaries, social workers) in Kano metropolitan, who were available during the period of this study and willing to participate.

Sample and sampling technique

A total of three hundred (300) office workers from different areas across the eight local governments (Dala, Fagge, Gwale, Kano-Municipal, Kumbotso, Nassarawa, Tarauni and Ungogo) in the Kano metropolitan were selected using a convenience sampling technique.

Data collection and analysis

The data was collected from the respondents by face-to-face interview technique using a semi-structured questionnaire. Written and verbal informed consent was taken from the respondents before the data collection. All the data collected were coded numerically and entered into a statistical software (SPSS version 22.0) for analysis. A Chi-square test was performed to find the association between variables and a p value of ≤0.05 was considered statistically significant.

RESULTS

Socio-demographic characteristics of the respondents

Table 1 shows that seven-tenths (70.0%) of the respondents were 36 years and above and the mean age of the respondents was 38.6±9.6 years. About 72.7% of the respondents were male and more than half (54.7%) had bachelor's degrees and above. More than seven-tenths (74.0%) of the respondents were married and the rest were unmarried (26.0%). Nevertheless little below nine-tenths (89.3%) of the respondents were from urban areas and the rest (10.7%) were residing in rural areas.

Figure 1 shows the prevalence of low back pain among the respondents of this study, the prevalence of LBP was 65.3% among the office workers in Kano metropolitan.

Distribution based on LBP risk factors

Table 2 shows that about 71.3% of the respondents had a familial history of LBP and more than half (57.0%) of the history was paternal. About 68.0% of the respondents had suffered musculoskeletal disorder in the past and the majority (54.4%) mentioned they suffered hip pain, followed by knee pain (39.7%). In this study less than one-tenth (7.0%) of the respondents were smokers and only 37.0% were exercising regularly. Little above two-fifths (41.7%) of the respondents used to take meals regularly and close to six-tenths (59.7%) of the respondents mentioned they were getting less than 6 hours of sleep a day.
Table 1: Socio-demographic characteristics of the respondents (N=300).

| Variables             | Frequency | Percent |
|-----------------------|-----------|---------|
| **Ages (in years)**   |           |         |
| ≤35                   | 90        | 30.0    |
| ≥36                   | 210       | 70.0    |
| **Mean±SD**           | 38.6±9.6  |         |
| **Sex**               |           |         |
| Male                  | 218       | 72.7    |
| Female                | 82        | 27.3    |
| **Educational level** |           |         |
| Diploma/NCE and below | 136       | 45.3    |
| Bachelor’s degree and above | 164 | 54.7 |
| **Marital status**    |           |         |
| Married               | 222       | 74.0    |
| Unmarried             | 78        | 26.0    |
| **Residence**         |           |         |
| Rural                 | 32        | 10.7    |
| Urban                 | 268       | 89.3    |

Table 2: Distribution based on LBP risk factors (N=300).

| Variables                                             | Frequency | Percentage |
|-------------------------------------------------------|-----------|------------|
| **Family history of LBP**                             |           |            |
| Yes                                                   | 214       | 71.3       |
| No                                                    | 86        | 28.7       |
| **If yes who? (N=214) (multiple response)**           |           |            |
| Father                                                | 122       | 57.0       |
| Mother                                                | 99        | 46.3       |
| Others                                                | 88        | 41.1       |
| **Had musculoskeletal disorder**                       |           |            |
| Yes                                                   | 204       | 68.0       |
| No                                                    | 96        | 32.0       |
| **If yes, which? (N=204) (multiple response)**        |           |            |
| Knee pain                                             | 81        | 39.7       |
| Hip pain                                              | 111       | 54.4       |
| Wrist pain                                            | 74        | 36.3       |
| Others                                                | 44        | 21.6       |
| **Smoking status**                                    |           |            |
| Yes                                                   | 21        | 7.0        |
| No                                                    | 279       | 93.0       |
| **Physical exercises**                                |           |            |
| Yes                                                   | 111       | 37.0       |
| No                                                    | 189       | 63.0       |
| **Habit of taking meal**                              |           |            |
| Regularly                                             | 125       | 41.7       |
| Irregularly                                           | 175       | 58.3       |
| **Sleeping hours**                                    |           |            |
| <6                                                    | 179       | 59.7       |
| ≥6                                                    | 121       | 40.3       |

Table 3: Distribution based on occupational and psychological factors (N=300).

| Variables                          | Frequency | Percentage |
|------------------------------------|-----------|------------|
| **Maintaining proper posture**     |           |            |
| Yes                                | 101       | 33.7       |

Continued.
| Variables                              | Frequency | Percentage |
|---------------------------------------|-----------|------------|
| No                                    | 199       | 66.3       |
| Using ergonomic chair                 |           |            |
| Yes                                   | 113       | 37.7       |
| No                                    | 187       | 62.3       |
| Weekly working hours                  |           |            |
| <25                                   | 131       | 43.7       |
| ≥25                                   | 169       | 56.3       |
| Job satisfaction                      |           |            |
| Yes                                   | 97        | 32.3       |
| No                                    | 203       | 67.7       |
| Work related stress                   |           |            |
| Yes                                   | 117       | 39.0       |
| No                                    | 183       | 61.0       |
| Family related stress                 |           |            |
| Yes                                   | 77        | 25.7       |
| No                                    | 223       | 74.3       |
| Financial related stress              |           |            |
| Yes                                   | 213       | 71.0       |
| No                                    | 87        | 29.0       |

Table 4: Relationship between prevalence of LBP and other related factors (N=300).

| Variables                              | Prevalence | Chi-square | Df | P value |
|---------------------------------------|------------|------------|----|---------|
| Age (in years)                         | Yes    | No    |     |         |
| ≤30                                   | 32     | 58   | 19.848 | 1 | <0.001 |
| ≥36                                   | 164    | 46   |      |     |        |
| Sex                                   | Male   | Female | 2.946 | 1 | 0.086  |
|                                       | 117    | 101   |      |     |        |
|                                       | 79     | 3     |      |     |        |
| Family history of LBP                 | Yes    | No    | 13.733 | 1 | <0.001 |
|                                       | 126    | 88    |      |     |        |
|                                       | 70     | 16    |      |     |        |
| Habit of taking meal                  | Regularly | Irregularly | 20.504 | 1 | <0.001 |
|                                       | 62     | 63    |      |     |        |
|                                       | 134    | 41    |      |     |        |
| Sleeping hours                         | <6     | ≥6    | 5.820  | 1 | 0.016  |
|                                       | 133    | 46    |      |     |        |
|                                       | 63     | 58    |      |     |        |
| Physical exercises                    | Yes    | No    | 47.817 | 1 | <0.001 |
|                                       | 45     | 66    |      |     |        |
|                                       | 151    | 38    |      |     |        |
| Smoking status                         | Yes    | No    | 8.916  | 1 | 0.003  |
|                                       | 20     | 1     |      |     |        |
|                                       | 176    | 103   |      |     |        |
| Maintaining proper posture             | Yes    | No    | 1.172  | 1 | <0.001 |
|                                       | 11     | 90    |      |     |        |
|                                       | 185    | 14    |      |     |        |
| Using ergonomic chair                  | Yes    | No    | 1.840  | 1 | <0.001 |
|                                       | 15     | 98    |      |     |        |
|                                       | 181    | 6     |      |     |        |
| Weekly working hours                  | <25    | ≥25   | 26.431 | 1 | <0.001 |
|                                       | 46     | 85    |      |     |        |
|                                       | 150    | 19    |      |     |        |

Continued.
Table 3 shows that 33.7% of the respondents were maintaining the proper posture and 37.7% of the respondents were using an ergonomic chair. About 56.3% of the respondents used to have about 25 or more working hours every week and only 32.3% of them were satisfied with their jobs. Close to two-fifths (39.0%) of the respondents had faced work-related stress, 25.7% family-related stress, and 71.0% financial-related stress. However, the gender of the respondents was not significantly associated with the prevalence of LBP.

Table 4 shows that the prevalence of LBP was significantly associated with the age of the respondents, family history of LBP, the habit of taking a meal, sleeping hours, physical exercises, smoking status, maintaining proper posture, using an ergonomic chair, weekly working hours, work-related stress. Family-related stress and financial-related stress. However, the gender of the respondents was not significantly associated with the prevalence of LBP.

**Distribution based on occupational and psychological factors**

Table 3 shows that 33.7% of the respondents were maintaining the proper posture and 37.7% of the respondents were using an ergonomic chair. About 56.3% of the respondents used to have about 25 or more working hours every week and only 32.3% of them were satisfied with their jobs. Close to two-fifths (39.0%) of the respondents had faced work-related stress, 25.7% family-related stress, and 71.0% financial-related stress. However, the gender of the respondents was not significantly associated with the prevalence of LBP.

**Relationship between prevalence of LBP and other related factors (N=300)**

Table 4 shows that the prevalence of LBP was significantly associated with the age of the respondents, family history of LBP, the habit of taking a meal, sleeping hours, physical exercises, smoking status, maintaining proper posture, using an ergonomic chair, weekly working hours, work-related stress. Family-related stress and financial-related stress. However, the gender of the respondents was not significantly associated with the prevalence of LBP.

**DISCUSSION**

This study aimed to find out the prevalence of LBP and associated factors among office workers in Kano city, Nigeria. In this study, the mean age of the respondents was 38.6±9.6 years. This was consistent with that of a similar study conducted among healthcare workers in Sokoto, Nigeria. About 72.7% of the respondents were male, this was inconsistent with the finding of a similar study conducted in the southern part of Nigeria. The prevalence of LBP among the office workers in Kano metropolitan was found to be 65.3%. A similar study conducted among professional drivers in Kano reported a 73.5% prevalence of low back pain. Another study conducted in Dhaka, Bangladesh among bank employees reported the prevalence of 36.6% which was inconsistent with that of our study. A study conducted in Nigeria found a 59.7% prevalence of LBP among industrial workers. More than half of the respondents used to have about 25 or more working hours every week. A study conducted in Denmark reveals that workers who spent a long time at the office were found to have a higher rate of low back pain.
The prevalence of LBP was significantly associated with the age of the respondents, a study reported increasing age as a significant risk factor for low back pain.22 Another study also revealed that older adults were reported to have LBP than young adults.19 Maintaining proper posture, weekly working hours and work-related stress were significantly associated with low back pain. A study carried out in Nigeria among healthcare providers reported that the respondents believed that poor posture, heavy physical work and prolonged sitting were responsible for their LBP.16 Smoking status was found significantly associated with LBP in this study. A similar study conducted in Nigeria found that smoking status was not significantly associated with LBP.20

In this study, regular physical exercise was significantly associated with LBP. Some studies on LBP reported that routine physical activity could reduce LBP.23,24 However gender of the respondents was not significantly associated with the prevalence of LBP. A similar study from Bangladesh reported that gender was not significantly associated with LBP.19 Nevertheless a systematic review revealed that the prevalence of LBP was increased for women relative to men.25

CONCLUSION

The findings of this study found a 65.3% prevalence of low back pain among the office workers in Kano metropolitan. However the prevalence of low back pain was significantly associated with the age of the respondents, family history of low back pain, the habit of taking a meal, sleeping hours, physical exercises, smoking status, maintaining proper posture, using an ergonomic chair, weekly working hours, work-related stress. Family-related stress and financial-related stress. Nevertheless, the gender of the respondents was not significantly associated with the prevalence of low back pain.

Recommendations

Office workers should be encouraged to maintain proper postures at work and there is a need for more educational programs regarding the prevention measures of low back pain. We also recommend a similar study to assess the level of knowledge and practice regarding prevention measures of LBP among the office workers in Kano metropolitan.

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