Prevalence and associated factors of low back pain in an urban Nigerian community

Prevalência e fatores associados de dor lombar em uma comunidade urbana da Nigéria

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ABSTRACT | INTRODUCTION: Low Back Pain (LBP) constitutes a public health problem as almost every individual is expected to experience LBP at least once during their lifetime. **OBJECTIVE:** This study is done to determine the prevalence of LBP and associated factors in an urban Nigerian community. **METHODS AND MATERIALS:** This cross-sectional household survey randomly selected 741 subjects using a 4-stage sampling technique. Data were obtained through a self-administered semi-structured questionnaire. Association between categorical variables and LBP was analyzed using the Chi-square test and multiple logistic regression model (α=0.05). **RESULTS:** Mean age of participants was 41.32 ± 15.24 years. The point, annual, and lifetime prevalence of LBP were 31.2%, 61.1%, and 70.6% respectively. Aged 40 years and above (p=0.006), being an artisan (p=0.005) or trader (p=0.007) compared to being an office worker (p=0.071), and continuously sitting more than 3 to 4 hours (p<0.001) are factors significantly associated with LBP. Others are transport duration to/from work more than or equal to 30 minutes (p<0.001), computer use (p<0.001), trauma history (p=0.045), never attending a health talk on back care (p<0.001), tobacco smoking history (p=0.006) and having an occasional (p=0.002) or no exercise routine (p<0.001). **CONCLUSION:** LBP is common among individuals in the study area with a point, annual, and lifetime prevalence of 31.2%, 61.1%, and 70.6% respectively. Interventions on LBP prevention should target correction of identified modifiable associated factors such as poor posture, physical inactivity and lack of information on LBP.

KEYWORDS: Low back pain. Community. Point prevalence. Annual prevalence. Lifetime prevalence.

RESUMO | INTRODUÇÃO: A Dor Lombar (DL) constitui um problema de saúde pública, já que se espera que quase todo indivíduo experimente lombalgia pelo menos uma vez durante a vida. **OBJETIVO:** Este estudo é feito para determinar a prevalência de LBP e fatores associados em uma comunidade urbana da Nigéria. **MÉTODOS E MATERIAIS:** Esta pesquisa domiciliar transversal selecionou aleatoriamente 741 indivíduos usando uma técnica de amostragem de quatro estágios. Os dados foram obtidos por meio de questionário semiestruturado autoaplicável. A associação entre variáveis categóricas e lombalgia foi analisada por meio do teste Qui-quadrado e modelo de regressão logística múltipla (α = 0.05). **RESULTADOS:** A média de idade dos participantes foi 41,32 ± 15,24 anos. A prevalência pontual, anual e ao longo da vida de lombalgia foram 31,2%, 61,1% e 70,6%, respectivamente. Idade igual ou superior a 40 anos (p = 0,006), ser artesão (p = 0,005) ou comerciante (p = 0,007) em comparação a ser trabalhador de escritório (p = 0,071) e ficar sentado continuamente por mais de 3 – 4 horas (p < 0,001) são fatores significativamente associados à DL. Outros são a duração do transporte de / para o trabalho maior ou igual a 30 minutos (p <0,001), uso de computador (p <0,001), história de trauma (p = 0,045), nunca compareceu a uma palestra de saúde sobre cuidados nas costas (p <0,001), tabagismo (p = 0,006) e prática ocasional (p = 0,002) ou nenhuma rotina de exercícios (p <0,001). **CONCLUSÃO:** DL é comum entre os indivíduos na área de estudo com uma prevalência pontual, anual e ao longo da vida de 31.2%, 61.1% e 70.6%, respectivamente. As intervenções na prevenção da DL devem ter como objetivo a correção de fatores associados modificáveis identificados, como postura inadequada, inatividade física e falta de informações sobre lombalgia.

PALAVRAS-CHAVE: Dor lombar. Comunidade. Prevalência pontual. Prevalência anual. Prevalência ao longo da vida.

Introduction

Worldwide, back pain is a very common health challenge and is also a major cause of disability. The 2010 Global Burden of Disease Study rates Low Back Pain (LBP) among the top 10 injuries and diseases that account for the highest number of Disability Adjusted Life Years (DALYs) globally[1]. This is a global cause of concern as the perception of pain at the low back is the most common reason, after respiratory illnesses, patients are referred to their physicians[2]. The increased frequency of occurrence of LBP in the population is disturbing, as well as its adverse effect on the active daily living. It is generally estimated that 50-80% of the world population at one point or the other would experience LBP at least once during their lifetime[3,4]. The biggest increase in the prevalence of LBP is predicted to be in developing countries where LBP would be an economic burden on the patient, caregiver, health system and the government as it is globally[5,6].

Previous studies from Nigeria, albeit from selected sub-populations, have reported the annual prevalence of Low Back Pain to be 72.4% and 89.3% among farmers[7] and occupational drivers[8] respectively. Birabi et al.[9] reported a point prevalence of 67.1% among farmers. Most studies available on LBP have either been on working populations[10,11] or are hospital based[12,13] leading to non-representative conclusions. There is a dearth of epidemiological data on LBP from individuals in the informal sector or the unemployed especially in low-income countries[14]. Community survey data on LBP is needed to provide data to include the different population subgroups.

Nigeria is the most populous black nation and according to the World Bank about 50 million people are within the labor force age group where LBP is expected to be more common than other age segments of the population. The inconvenience associated with LBP is enormous and has implication on Gross Domestic Product (GDP) and human resources of any nation. Research on contemporary population problems often neglects LBP as more emphasis is on communicable diseases ravaging the African continent[15]. Therefore, in this study, we identified the factors associated with LBP in an urban community in Nigeria, Sub-Saharan Africa.

This study determined the point, annual, and lifetime prevalence of Low Back Pain using a community sample and also assessed the factors predisposing residents of a typical lower middle income country to experience LBP irrespective of their employment status and/or socio-economic status. It is hoped that the point, annual, and lifetime prevalence found in this study may help discard any faulty anecdotal views, especially when discussing how widespread LBP is. Also, the associated factors would be identified and preventive strategies would be planned and instituted.

Method

This study is a community-based cross-sectional survey carried out among residents of Ibadan South-West Local Government which is an urban settlement in Nigeria. Nigeria is a developing country in Sub-Saharan Africa with a GDP of US$444.916 billion (2019) and classified by the World Bank in the lower middle income level category. Ibadan is located in South-western part of Nigeria. It lies within latitude 7° 19′ 08″ and 7° 29′ 25″ of the equator and longitude 3° 47′ 50″ and 4° 0′ 22″. It is the capital of Oyo state and made up of eleven Local Government Areas including Ibadan South-West Local Government Area. Ibadan South-West Local Government has an area of 40km^2 and a population of 282,585 according to the 2006 census conducted by the National Populations Commission. It is an urban area with the inhabitants' mainly civil servants and private business owners.

The study population was consenting adults aged at least 18 years and resident in Ibadan South-West Local Government Area. Individuals with a residual medical condition such as a congenital deformity or that underwent surgical procedures to their back in the past 1 year were excluded. Also, individuals with back pain originating from non-mechanical origins (tumors, inflammatory conditions such as spondyloarthritis, and infections) or referred from internal organs (gallbladder disease, kidney stones, kidney infections, and aortic aneurysm, among others) diagnosed by a competently qualified medical

personnel during routine hospital visit in the last 1 year were excluded from the study. Using the sample size formula for estimating simple proportions, the calculated minimum sample size was 732. Ethical approval for this study was granted by the Oyo State Ethics Review Committee. Each participant not only gave verbal consent but also signed or thumb printed the accompanying informed consent form which was written in both English and Yoruba language. Eligible interested participants were guided by adequately trained research assistants. All returned questionnaires were checked for accuracy at the point of collection.

Data were collected using a self-administered semi-structured questionnaire. The 741 participants were selected using a 4-stage multistage sampling technique. From the list of the Enumeration Areas (EAs) provided by the National Population Census of Ibadan Southwest Local government, five (5) EAs was randomly selected using Systematic Random Sampling. Further, a cluster sampling of the five (5) enumeration areas (EAs) was done. A minimum of One hundred and forty seven (147) consenting eligible adults were selected from each EA. From each EA, one household was randomly selected by balloting. This randomly selected household served as the starting point and subsequent houses were visited in odd numbers using the random walk and quota sampling method. Each consenting eligible individual in consecutive households in each of the cluster were interviewed for the survey until the pre-determined quota was reached.

The instrument used was semi-structured based on the conceptual framework on socio-demographic, posture, lifestyle and other variables such as previous history of trauma and exposure to information. Face and content validity was adopted to test the validity of the questionnaire while the validity was tested by the test-retest method (r = 0.85). A draft of the questionnaire was pilot tested among 54 randomly selected individuals in the study area. These individuals were exempted from the main study. In order to ensure uniformity, respondents were shown a diagram in which the region between the lower margins of the 12th rib and the gluteal folds were highlighted and asked to indicate if they had pain in that anatomical region. To determine the point, annual and lifetime prevalence of LBP, respondents were asked the following questions respectively: "Do you experience Low Back Pain at present or in the last 30 days? "Have you experienced Low Back Pain in the last 12 months?", and "Have you ever experienced Low Back Pain?" To determine the duration of the Low Back Pain experience, respondents were asked: "How long have you been experiencing your low back pain?" with "Acute; Less than 2 weeks", "Sub-Acute; between 2 weeks and 3 months", and "Chronic; Greater than 3 months" as options.

To determine the pain severity, a Visual Analogue Scale was utilized. On a scale of one (1) to ten (10), with 1 representing the least pain and 10 the worst pain, participants with pain within the last 30 days were asked to indicate their level of pain. Scores of 1-3, 4-6, and 7-10, were categorized as mild, moderate and severe respectively. In order to investigate absenteeism, respondents who have ever experienced LBP were asked if they had been absent from work due to the pain. They were further asked to indicate the number of days they were absent from work in the last 12 months due to LBP. To determine the care seeking practices of respondents who have ever experienced LBP, respondents were asked the question: "Which medical help have you sought due to your Low Back pain?" and "What do you often do when you start experiencing Low Back Pain?"

Data was analyzed using the Statistical Package for the Social Sciences (SPSS) v20. Association between categorical variables based on the conceptual framework (such as age, marital status, occupation, level of education, religion, posture often assumed, form of transport often utilized, period spent sitting continuously, duration of transport, computer use, history of trauma, back care talk exposure, smoking status and exercise routine) and LBP was analyzed using the Chi-square test and multiple logistic regression model. A probability level of $p < 0.05$ was accepted as being of statistical significance.

Results

Socio-demographic characteristics

There were 741 respondents, 345 males (46.6%) and 396 females (53.4%). The respondents were aged between 18 and 82 years with a mean age of 41.3 (SD = 15.2) years. Over half (58.2%), of the respondents were married. Most of the respondents (590, 79.7%) have at least a secondary school education. The characteristics of the study population are presented in Table 1.

Table 1. Socio-demographic Characteristics of the Sample

Characteristics	Categories	n (%)
Sex	Male	345 (46.6)
	Female	396 (53.4)
Age (Years)	18 – 29	191 (25.8)
	30 – 39	179 (24.2)
	40 – 49	143 (19.3)
	50 – 59	122 (16.5)
	60 and above	106 (14.3)
Marital Status	Single	250 (33.7)
	Married	431 (58.2)
	Separated/Divorced/Widowed	60 (8.1)
Occupation	Office Worker	171 (23.1)
	Artisan	208 (28.1)
	Trader	212 (28.6)
	Teacher	83 (11.2)
	Unemployed	67 (9.0)
Highest Level of Education Attained	No Formal Education	44 (5.9)
	Primary	107 (14.4)
	Secondary	315 (42.5)
	Post-Secondary	275 (37.2)
Religion Practiced	Christian	451 (60.9)
	Muslim	290 (39.9)
Current Smoking Status	Yes	70 (9.4)
	No	671 (90.6)
Lifetime Smoking Status	Yes	197 (26.6)
	No	544 (73.4)

Prevalence of Low Back Pain

As at the time of the survey, 231 respondents reported having Low Back Pain, thus Point Prevalence was 31.2% and 453 had experienced Low Back Pain within the last 12 months representing an Annual Prevalence of 61.1%. The Lifetime Prevalence is 70.6%.

Out of the 523 respondents who have ever experienced LBP, 238 (45.5%) were males and 285 (54.5%) were females. The prevalence was 69.0% among males and 72.0% among females (Table 2). There was no significant association between sex and LBP (p = 0.374). Significantly higher prevalence of Low Back Pain was found among respondents aged 40 and greater (92.7%) compared to those between ages 18 – 39 with a prevalence of 48.4% (p<0.001). There was a significant difference (p<0.001) in the prevalence of Low Back Pain based on marital status. Single respondents have a prevalence of 45.6%, married respondents have a prevalence of 82.1% while respondents who are either separated, divorced or widowed have a prevalence of 91.7%.

Table 2. Distribution of Low Back Pain (LBP) by Age and Sex

Age (Years)	Male		Female		Total	
	N	n (%LBP)	N	n (%LBP)	N	n (%LBP)
18 – 29	90	43 (47.8)	101	48 (47.5)	191	91 (47.6)
30 – 39	89	43 (47.8)	90	45 (50.0)	179	88 (49.2)
40 - 49	70	61 (87.1)	73	65 (89.0)	143	126 (88.1)
50 – 59	51	47 (92.2)	71	68 (95.8)	122	115 (94.3)
60 and above	45	44 (97.8)	61	59 (96.7)	106	103 (97.2)
Total	345	238 (69.0)	396	285 (72.0)	741	523 (70.6)

N= Total Number, n= number with low back pain

Based on educational status, prevalence of Low Back Pain is highest among respondents with either no formal education or those with primary school education (96.0%), lowest among those with secondary education (63.2%) and those with post-secondary education has a prevalence of 65.1%. This relationship is statistically significant (p<0.001). A statistical significant association was found between Lifetime prevalence of Low Back Pain and occupation as respondents with office related work have the lowest prevalence of 64.3% and the highest prevalence was among traders (74.7%) (p=0.019) (Table 3).

Table 3. Distribution of Low Back Pain (LBP) among occupational groups stratified by sex

Occupation	Male		Female		Total	
	N	n (%LBP)	N	n (%LBP)	N	n (%LBP)
Office Worker	77	56 (72.7)	94	54 (57.4)	171	110 (64.3)
Artisan	123	77 (62.6)	85	61 (71.8)	208	138 (66.4)
Trader	71	54 (76.1)	141	112 (79.4)	212	161 (78.3)
Teacher	41	28 (68.3)	42	34 (81.0)	83	62 (74.7)
Unemployed	33	23 (69.7)	34	24 (70.6)	67	47 (70.2)
Total	345	238 (69.0)	396	285 (72.0)	741	523 (70.6)

N= Total Number, n= number with low back pain

A statistically significant relationship was found in the association between current smokers and experiencing Low Back Pain (p<0.001). A high proportion (92.9%) of current smokers has at one time in their lifetime experienced Low Back Pain as against 68.3% of non-smokers. Previous history of smoking also had a statistically significant relationship with experiencing Low Back Pain (p<0.001). Among respondents who have ever smoked, 94.4% have experienced Low Back Pain as against 61.9% of respondents who have never smoked tobacco.

Associated Factors of Low Back Pain

Multivariate analysis was carried out using variables that were significant in bivariate analysis. Variables there were sustained as significant associated factors included being 40 years and older, occupation as an artisan, occupation as a trader, assuming varied posture and continuous sitting for more than 3 – 4 hours. Other statistically significant risk factors include transport duration to work more than 30 minutes, use of computer, previous history of trauma, never attending a health care talk on back care, ever smoked and not having a regular exercise culture (Table 4).

Table 4. Univariate and Multivariate Logistic Regression. Characteristics associated with reporting ever experienced LBP

Variable	Category	Crude OR (95% C.I) p	Adjusted OR (95% C.I) p
Age	18 -39 *(Ref)*	1	1
	40 and above	13.74 (8.837 – 21.373) <0.001	3.63 (1.433 – 9.114) 0.006
Marital Status	Single *(Ref)*	1	1
	Married	5.40 (3.807 – 7.657) <0.001	1.66 (0.740 – 3.728) 0.218
	Others[a]	13.12 (5.082 – 33.889) <0.001	0.69 (0.119 – 4.040) 0.683
Occupation	Office Worker *(Ref)*	1	1
	Artisan	1.07 (0.700 – 1.636) 0.753	5.40 (1.652 – 17.640) 0.005
	Trader	2.00 (1.273 – 3.146) 0.003	4.03 (1.475 – 11.000) 0.007
	Teacher	1.64 (0.912 – 2.940) 0.099	4.16 (0.885 – 19.564) 0.071
Highest Level of Education Attained	Post – Secondary *(Ref)*	1	1
	None[b]/Primary	13.17 (5.611 – 30.910) <0.001	1.60 (0.338 – 7.533) 0.555
	Secondary	0.94 (0.667 – 1.310) 0.695	1.04 (0.427 – 2.513) 0.938
Religion Practiced	Christian *(Ref)*	1	1
	Muslim	1.80 (1.280 – 2.516) 0.001	1.03 (0.531 – 1.979) 0.940
Posture often Assumed	Lifting *(Ref)*	1	1
	Leaning Forward	6.70 (2.148 – 20.695) 0.001	2.71 (0.324 – 22.719) 0.358
	Standing	2.70 (1.113 – 6.460) 0.028	3.93 (0.639 – 24.185) 0.140
	Sitting	5.00 (2.112 – 11.687) <0.001	4.56 (0.766 – 27.090) 0.095
	Varied[c]	4.32 (1.651 – 11.397) 0.003	8.31 (1.239 – 55.741) 0.029
Form of Transport often Utilized	Foot *(Ref)*	1	1
	Private	2.51 (1.488 – 4.246) 0.001	0.78 (0.243 – 2.470) 0.666
	Public	3.07 (1.969 – 4.801) <0.001	1.09 (0.448 – 2.637) 0.853
Period Spent Sitting Continuously	< 3 – 4 hours *(Ref)*	1	1
	> 3 – 4 hours	14.90 (9.263 – 23.946) <0.001	5.56 (2.554 – 12.093) <0.001
Duration of Transport[d]	< 30 minutes *(Ref)*	1	1
	> 30 minutes	16.18 (9.992 – 26.206) <0.001	16.11 (3.035 – 12.093) <0.001
Computer Use	No *(Ref)*	1	1
	Yes	2.90 (1.935 – 4.319) <0.001	7.07 (3.015 – 16.601) <0.001
History of Trauma	No *(Ref)*	1	1
	Yes	17.13 (8.598 – 34.135) <0.001	2.73 (1.024 – 7.266) 0.045
Back Care Health Talk Organized by Employer	Yes *(Ref)*	1	1
	No	4.34 (2.273 – 8.286) <0.001	1.43 (0.394 – 5.198) 0.537
Attended Back Care Health Talk	Yes *(Ref)*	1	1
	No	7.635 (5.227 – 11.153) <0.001	4.90 (2.124 – 11.285) <0.001
Current Smoking status	No *(Ref)*	1	1
	Yes	6.09 (2.416 – 15.336) <0.001	0.21 (0.038 – 1.199) 0.079
Lifetime Smoking Status	No *(Ref)*	1	1
	Yes	10.47 (5.562 – 19.70) <0.001	4.96 (1.576 – 15.631) 0.006
Exercise Routine	Regularly *(Ref)*	1	1
	Occasionally	4.06 (2.582 – 6.372) <0.001	3.60 (1.595 – 8.140) 0.002
	Never	62.97 (31.913 – 123.057) <0.001	43.28 (4.863 – 137.926) <0.001

a= Separated/Divorced/Widowed, b= No Formal education, c=bending over, twisting and/or slouching, d= Transport duration to and from work

The multivariate analysis shows that individuals 40 years and older are more likely to experience Low Back Pain (p=0.006). Also, occupation as an artisan (p=0.005) and a trader (p=0.005) is an associated factor. Individuals who continuously sit for more than 3 – 4 hours are more likely to develop Low Back Pain (p<0.001). Transporting to or from work with a duration more than 30 minutes is an associated factor to developing Low Back Pain (p<0.001).

Users of computer are more likely to experience Low Back Pain in their lifetime than non-users. This relationship is significant in the multivariate analysis (p<0.001). Individuals with previous history of trauma to their back are more likely to develop Low Back Pain in their lifetime (p=0.045). Individuals who have ever attended a health care talk on back care are less likely to ever experience Low Back Pain. This association is statistically significant (p<0.001).

Individuals with tobacco smoking history are more likely to experience Low Back Pain in their lifetime. The relationship is statistically significant (p=0.006). Individuals who engage in regular exercise infrequently, that is, not up to 150 minutes of moderate-intensity aerobic physical activity or 75 minutes of vigorous-intensity aerobic physical activity throughout the week as defined by the World Health Organization (W.H.O), are more likely to experience Low Back Pain in their lifetime. The relationship is statistically significant (p=0.002). While those who never exercise have a greatly increased chance of experiencing Low Back Pain in their lifetime. The association is statistically significant (p<0.001).

Duration, severity of Low Back Pain and absenteeism from work due to Low Back Pain

Of the 523 respondents who reported ever experiencing Low Back pain, 38 (7.3%) reported that the pain occurred less than 2 weeks to the survey. About 38% reported that they have been experiencing the Low Back Pain between 2 weeks and 3 months and 55.3% describe their pain as occurring for more than 3 months. This scale classifies respondent's Low Back Pain as Acute, Sub-Acute, and Chronic respectively.

On the Visual Analogue Scale, the least score by a respondent with Low Back Pain was 1 while the highest score was 9. Stratifying the responses in terms of severity, 294 (56.2%) described the pain they experience as mild, 216 (41.3%) described the pain they experience as moderate, while 13 (2.5%) of the respondents who have ever experience Low Back Pain described the pain as severe.

Seventy six respondents (16.1% of the 473 respondents who are gainfully employed and have ever experience Low Back Pain) reported that they were absent from work due to the Low Back Pain they experienced. The 76 respondents took a total of 238 days off. The minimum period off work was 1 day while the maximum period taken off work due to Low Back Pain was 24 days. This gives a mean of 3.13 ± 3.12 days off work per employee (Table 5).

Table 5. Days absent from work due to Low Back Pain (LBP) based on occupation

Occupation	n	Min	Max	Sum	Mean	±SD	%
Artisans	27	1	24	82	3.04	4.407	34.45
Traders	21	1	14	75	3.57	2.803	31.51
Office Workers	18	1	6	56	3.11	1.491	23.53
Teachers	10	1	5	25	2.50	1.509	10.51
Total	76	1	24	238	3.13	3.12	100.00

Care seeking practice for Low Back Pain

The Local Chemist was mostly sought for care among those with Low Back Pain (41.1%). Other personnel sought were the Medical Doctor (32.7%), Physiotherapist (29.1%), Traditional Healer (21.0%), Nurse (11.7%), and the Dietitian (4.2%). Eighty nine respondents (17.0%) did not seek any care due to their Low Back Pain.

When asked what respondents with Low Back Pain often do when they start perceiving the pain in their low back, the majority (35.2%) of respondents reported that they had bed rest. One hundred and sixty one respondents (30.8%) responded that they carry on with their activities while 26.4% of respondents reports they immediately self-medicate with the drugs they have in possession at hand. Less than a tenth (7.6%) of all respondents with Low Back Pain said they immediately see a health care provider.

Discussion

The point, annual, and lifetime prevalence of LBP found in this study were 31.2%, 61.1% and 70.6% respectively. The odds of LBP were higher among older respondents 40 years and older, artisans and traders, and those assuming varied posture and continuous sitting for more than 3 – 4 hours. Other associated factors are transport duration to work more than 30 minutes, use of computer, previous history of trauma, never attending a health care talk on back care, ever smoked and not having a regular exercise culture. Of 473 respondents who are gainfully employed and have ever experienced Low Back Pain, 76 respondents (16.1%) reported taking a total of 238 days off work (Mean = 3.13 days ± 3.12).

The point prevalence of Low Back pain in this study remained within the expected range proposed by Roy et al.[16] who reported that "there is substantial information on low back pain prevalence and estimates of the point prevalence range from 1.0% to 58.1%". The annual prevalence of Low Back Pain found in our study is 61.1% which also remained within the range postulated by Roy et al.[16] which reports that "estimates of … 1 year prevalence (ranges) from 0.8% to 82.5%".

However, this is higher than the annual prevalence reported by a number of research carried out in the last century[17-19]. This may indicate an increasing trend in the annual prevalence of LBP over the years. It is commonly reported that 50–80% of the any sampled population suffers from idiopathic lower back pain at least once in their lifetime[3,4]. This appears to be corroborated by our study.

The association between increasing age and LBP has been reported by several authors[17,20] and supported by our study. This association may be explained by the senile spinal degeneration processes that accompanies increasing age. Findings of our study is similar to those of an indigenous study[19] that reported maintaining continuously sitting position for more than 3-4 hours is a significant risk factor. Coenen et al.[21] suggests that if uninterrupted for an extended period of time, what is popularly perceived as a "good" posture could still be detrimental. The association could be due to the fact that habitual continuous sitting may result in a decrease in the height of the intervertebral disc space caused by the axial load of the spine due to the weight of the individual. This eventually causes mechanical stress on the lumbar spine especially when the individual sits continuously on an un-ergonomic furniture. Thus, a compromise of the musculoskeletal integrity is experienced.

Computer use is an important associated factor of LBP identified in this study. This is similar to the findings of Borhany et al.[22] that found significant relationship. This relationship may be explained by a combination of factors such as spending a lot of time behind the device, assuming unhealthy postures, and sitting on an un-ergonomic furniture. Lack of information through health talk on back care is found in our study to be an associated factor of LBP. This is in line with the finding of a study[23] that mentioned that information about a chronic disease (through the media) would greatly reduce the incidence of the disease and also improve health care as individuals are better informed of what to expect. Majority of our respondents have at least secondary education, and if this is considered with exposure to health talk on back care through the media or seminars, this may tend to assist them to be better informed on their back health and thus they do not engage in activities which may predispose them to assuming postures that may be detrimental to their back.

Transport duration to and from work has been a controversial topic in literature. For example, Beija et al.[24] reported that neither transportation means, nor journey duration was associated with Low Back Pain, whereas, our study found a statistically significant association. We may have found transport duration a significant associated factor because most of respondents who answered in the affirmative of transport duration 30 minutes or greater use the public transport system. It may be beneficial to investigate the effect of the public transport system on developing LBP among this population in future studies. Our study found history of tobacco use to be statistically associated with risk of developing Low Back Pain. This is similar to the findings of numerous studies in literature that have found a significant relationship between smoking and occurrence of Low Back Pain[25,26]. Although the biological mechanism is not fully understood, this association can be as a result that smoking decreases the absorption of nutrients by the discs in the back. This slows down healing and leads to a prolonged pain experience. Also, the relationship between smoking and LBP may be explained by the possibility that smoking may lead to reduced perfusion and malnutrition of tissues in and around the spine and cause these tissues to respond inefficiently to mechanical stress[27].

Results of studies about relationship between physical activity and LBP are inconclusive. For example, research by Rezaee et al.[28] and Lunde et al.[29] showed no association between the two variables. The findings of our study, however, is similar to those of a number of studies[30,31] that reported beneficial effects of regular physical activities. In fact, our study found out that compared to those who regularly exercise and engage in physical activities as defined by the W.H.O., those who occasionally engage in physical activities or exercises are more likely to develop Low Back Pain while individuals who never engage in physical activities have extremely higher odds to develop Low Back Pain. This association has been explained by the benefits of regular graded exercises which help to maintain and/or improve the dexterity of the joints and keep the musculoskeletal structures intact. Thus, regular physical activities would condition the body to tolerate moderate movement as required. A public appeal to engage in regular graded physical activity thus is advantageous not only in maintaining a better cardiovascular health but also to improve musculoskeletal integrity.

We found that respondents took an average of 3.12 days off work due to Low Back Pain in the last 12 months. This is similar to the findings of Omokhodion[14] that reported mean days off work of 3 days. Unlike the developed world, there is no state compensation or benefits for time loss off work due to Low Back Pain in Nigeria[14]. In most developing countries like Nigeria, a substantial number of blue collar workers earn their wages through daily pay. Thus, individuals (and their dependent families) absent from work due to Low Back Pain may be financially handicapped when they could not earn the money to survive for the day. This may take a greater toll on the overall economic situation when a large number of employees report in sick. In the long term, productivity is reduced and economic stability is shaky.

In terms of care seeking practice, the most consulted help for Low Back Pain in our study is the local chemist. This is similar to the findings of an indigenous study almost two decades ago[32] who reported that 80% of Low Back Pain sufferers from her study consulted the local chemist. The similarity of this finding may be due to a similar study population and shows that the care seeking preference of individuals have not changed much overtime. The local chemist is more assessable to the populace and may offer cheaper, if not free, consultation fees for their clients. Majority of the citizenry may prefer this option than reporting to a local health center or a health care professional due to the relatively cheap services offered by the local chemist despite the fact that many of those who offer services at the local chemist are unqualified and may be acting based on unproven past experiences.

The strength of our work is the fact that it is a community survey which provides a better estimate from larger representative sample compared to research works that studied occupational groups or hospital based populations alone. A major limitation perceived is the effect of recall bias as quite a number of respondents took time to remember episodes of LBP and other factors such as number of days absent from work. As this is a community based survey, the generalization of the results should therefore be cautious.

Conclusion

This study has shown that the prevalence of Low Back Pain in an urban sub-population in a developing country like Nigeria is similar to those of industrialized countries. Also, the predisposing factors to developing Low Back Pain in the urban population surveyed are similar to those of the westernized world. As such, Low Back Pain is clearly not a burden of the industrialized world. This similarity may be due to Africans adopting western lifestyles. Public health interventions focusing on prevention of LBP need to target correction of modifiable associated factors such as poor posture, computer use, physical inactivity, and lack of information through health education as this would assist in reduction of LBP prevalence in the populace.

Competing interests

No financial, legal or political competing interests with third parties (government, commercial, private foundation, etc.) were disclosed for any aspect of the submitted work (including but not limited to grants, data monitoring board, study design, manuscript preparation, statistical analysis, etc.).

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