

Prevalence and Pattern of Musculoskeletal Pain in a Rural Community in Southwestern Nigeria

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Abstract

Objectives: To determine the prevalence and pattern of musculoskeletal pain and healthcare seeking behaviour of dwellers of Igbo-Ora, a rural Southwestern Nigerian community. **Design:** Cross-sectional descriptive survey design. **Setting:** Igbo-Ora, a rural Southwestern Nigerian community. **Subjects:** One thousand two hundred and sixty two (805 males and 457 females) adult dwellers. **Main outcome measures:** Patient reported outcomes in terms of pain experienced and healthcare seeking behavior. **Results:** Participants were aged 38.8 ± 2.8 years. One thousand and nine participants (677 males and 332 females) reported experience of MSP during 12 months prior to study, giving a 12-month prevalence of 80.0%. The three most frequently reported sites of MSP were low back (47.0%), shoulder pain (19.9%) and knee (15.1%). Prevalence of MSP was high among occupational drivers (92.4%), farmers (89.4%) and artisans (84.6%). Gender ($\chi^2=11.676$; $p<0.001$), age ($\chi^2 = 14.111$; $P<0.02$) and occupation ($\chi^2=94.714$; $p<0.001$) were significantly associated with prevalence of MSP. Majority of participants (63.9%) believed MSP is work-related. Only 7.2% of participants sought hospital treatment while the majority (81.9%) used self-prescribed drugs for pain alleviation. **Conclusion:** MSP is highly prevalent in this rural Southwestern Nigeria community, with eight out of every ten adult residents experiencing MSP in 12 months. The most frequent healthcare-seeking behaviour among these rural dwellers was self-prescribed drugs. There is dire need for health education on MSP for these rural dwellers.

INTRODUCTION

Musculoskeletal Pain (MSP) is a global problem affecting all spheres of human endeavours; gulping a lot of money as compensation in many developed countries (1). MSP is a leading cause of long-term disability, with substantial impact on quality of life and use of health resources. In the United States of America, the overall cost of MSP was estimated to be about 214.9 billion US Dollars and the direct costs of managing MSP that was work-related amounted to 88.7 billion US Dollars, of which 38% was spent on hospital admission and 21% on nursing home care (2). In the United Kingdom, 13% - 44% of workers were reported to suffer MSP and about 11.6 million working days were reported lost to MSP in 2004 and 2005 (3, 4).

Prevalence and pattern of MSP has been fairly well documented in occupational groups in Nigeria. A survey of MSP among computer users in Nigeria reported the prevalence of low back pain and neck pain to be 74% and 73% respectively (5). Low back pain and neck pain were reported to be the most common MSP among dentists in South-eastern Nigeria (6) and physiotherapists in Nigeria

(7). The prevalence of specific MSP in Nigeria has also been documented. The 12-month prevalence of low back pain among staff in a rural hospital and office workers in an urban centre in Nigeria was reported to be 46% (8) and 38% (9) respectively. Gureje et al (10) reported the prevalence of spinal pain to be 16.4% (95% confidence interval, 14.5%-18.5%) in a probability sample of 2143 from 21 states of Nigeria. Community-based studies on the prevalence and pattern of MSP in Nigeria are few. This study was therefore conducted to determine the prevalence and pattern of MSP in a rural Nigerian community. The study also sought to determine the rural dwellers' beliefs about causes of MSP and their healthcare-seeking behaviour in regard to MSP.

METHODS

This descriptive survey was carried out in Igbo-Ora, a rural community in the Ibarapa district of Oyo state, Southwestern Nigeria. The choice of the community was based on the fact that the Igbo-Ora comprehensive health centre is a collaborative study centre for Oyo State Government, the University of Ibadan and the World Health Organization

(WHO). The community was therefore familiar with participating in surveys. According to Ogunlesi (11), results of previous studies and activities documented in Igbo Ora have served as models in Nigeria and abroad for innovations in gathering vital data, designing medical education, organizing medical research and controlling tropical diseases. According to the 1991 Nigerian Population Commission’s census figures with demographic details (the most recent available detailed census results in Nigeria as at the time of this study), the population of Igbo-Ora was 46,472 and adults aged 18 years and above constituted 55% of the population. Using these data and a WHO recommended equation (12), the sample size was estimated to be 1262 prior to data collection.

A multi-stage cluster sampling technique was used to recruit participants into the study and the six Nigerian Population Commission’s enumeration blocks in Igbo-Ora formed the six clusters. Three of the blocks were selected using a simple random sampling technique. The number of people to be interviewed in each block was determined by a probability proportional to size method, using the number of households in each block according to the 1991 Census results for Igbo-Ora (the most recent census results with detailed information for the community as at the time of data collection). A starting point, a prominent landmark, such as market place, church, mosque or bus station was selected in each block. The direction to take from the starting point was determined using simple random technique. Each consecutive house was visited till the sample size for that block was attained. In each house all adults who were ≥18 years old and who gave consent were interviewed, using the Standardized Nordic Questionnaire for the analysis of MSP. Participants who did not understand English were interviewed using a Yoruba translated version of the questionnaire (Yoruba is the indigenous language of Southwestern Nigeria). The Questionnaire was translated independently by two language experts (proficient in English and Yoruba languages) who later met to produce a consensus translation. The consensus translation went through two rounds of back translation and was pretested prior to data collection. Information on the healthcare-seeking behaviours of participants who reported MSP 12 months prior to study was also collected using a validated self-developed questionnaire. Data was summarized using descriptive statistics (mean, and frequency distribution). Association between MSP and each of age, gender and occupation was analysed using Chi-square.

RESULTS

Participants were 1262 (805 males, 457 females) adult residents of Igbo-Ora. They were aged 38.8±2.8 years. Majority of the participants either had no formal education (31.9%) or primary education only (40.2%). Only 5.9% of the participants had tertiary education and the remaining 22.1% had secondary education. A total of 1009 (677 males, 332 females) participants reported experience of MSP during 12 months prior to the study, giving a 12-month prevalence of 80.0%. The 12-month prevalence of MSP was 84.1% for the male and 72.6% for the female participants, and gender was significantly associated with prevalence of MSP ($\chi^2=11.676$; $p<0.001$). The prevalence of MSP was over 70% in all age groups except for age group <20 years, where it was 65.7%. Age was significantly associated with prevalence of MSP ($\chi^2 = 14.111$; $P<0.02$) (table 1).

Figure 1

Table 1: Prevalence of MSP by Age Group

Age Group (years)	No of participants	Participants who reported MSP	Prevalence of MSP (%)	χ^2	P
<20	67	44	65.7	14.111	0.02
20-29	311	250	80.4		
30-39	313	250	79.7		
40-49	260	214	82.3		
50-59	142	112	78.9		
60+	169	139	82.2		
Total (all Age groups)	1262	1009	80.0		

The prevalence of MSP was over 70% in all occupational groups, except the students where it was only 35.4% (table 2).The group with the highest prevalence was the occupational drivers (92.4%). There was significant association between occupation and prevalence of MSP ($\chi^2 = 94.714$; $p< 0.001$).

Figure 2

Table 2: Prevalence of MSP by Occupation

Occupational Group	Number surveyed	Number who reported MSP	Within group prevalence (%)	χ^2	P
Artisan	518	438	84.6	94.714	0.000
Trader	377	271	71.9		
Farmer	142	127	89.4		
Driver	119	110	92.4		
Civil Servant	48	38	79.2		
Student	39	14	35.9		
Others	19	11	57.9		
Total	1262	1009	80.0		

The most frequently reported site of MSP was low back, and this was reported by 593 (47.0%) participants. Other common sites of MSP reported by participants are shoulder (20%), knee pain was reported in 15.1% of participants. Only 6.2% of participants reported experience of neck pain during 12 months prior to the time of study. The ankle and upper back were the least frequently reported sites of MSP (fig. 1). Most (74.5%) of the participants who reported MSP indicated only one pain site, while 23.6% reported pain in two body parts. Only 1.9% of participants with MSP reported more than 2 pain sites.

Figure 3

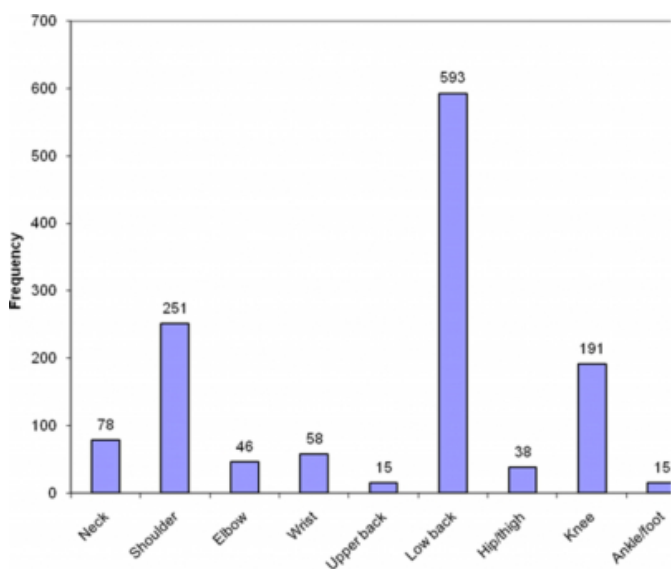


Figure 1: Distribution of MSP in Body Regions

Most participants (64%) believed that MSP is caused by occupation while about a quarter of them had no idea about the causes of MSP. About 4% believed that MSP is caused by posture and 2% by pile (table 3).

Figure 4

Table 3: Participants' Beliefs about Causes of MSP

Beliefs	Frequency	Percentage (%)
Occupation	807	63.93
Posture	50	3.96
Pile	25	1.98
Infection	19	1.50
Old Age	21	1.66
Road traffic accident	7	0.55
Sport	8	0.63
Others	4	0.32
No Belief	321	25.44
Total	1262	100.0

The most common healthcare seeking behaviour among these rural dwellers was self-prescribed drugs, which was reported in 82% of participants with MSP. Only 7% of participants sought healthcare from the hospital and the remaining 7% used fomentation or herbal preparations (table 4).

Figure 5

Table 4: Health Seeking Behaviour of Participants with MSP

Behaviour	Frequency (n)	Percentage (%)
Self-prescribed Medication	826	81.9
Herbal	59	5.8
Fomentation & Massage	16	1.6
Hospital treatment	72	7.1
None	36	3.6
Total	1009	100.0

DISCUSSION

Most participants had no or little formal education and were artisans, farmers, traders and occupational drivers, supporting the rural setting of Igbo-Ora. Musculoskeletal Pain (MSP) is very prevalent in Igbo-Ora; eight out of every ten adult residents of the community experience MSP in 12 months. This implies that the burden of MSP in this Nigerian rural community is high. It is difficult to compare MSP prevalence obtained in this study with those reported in previous studies from Nigeria. This is due to the fact that previous studies (7-10) focused on specific types of MSP, such as spinal pain, neck pain and low back pain, whereas the present study reports prevalence of MSP in any body part. However, the finding that low back pain is the most

frequently reported MSP agrees with the findings of Adedoyin et al (5), Udoye & Aguwa (6) and Adegoke et al (7). In addition, the prevalence of low back pain in this study (47%) is similar to the prevalence (46%) earlier reported for hospital staff in the same rural community (Igbo Ora) (8).

The results of the present study do not show any trend in MSP prevalence with age (table 1). However, the significant association between age and MSP prevalence probably implies that the risk of having MSP is high in adults aged 20 years and above. The finding that MSP is significantly associated with gender implies that the risk of MSP occurrence is higher in the male rural dwellers. The significant association between MSP and occupations implies that MSP is work-related and chances of having MSP are high among occupational drivers, artisans, farmers and traders. Occupational drivers sit for long periods of time behind the steering. This is coupled with poor conditions of vehicles and roads in most rural communities in Southwestern Nigeria. Traders in rural communities often carry farm produce on their heads trekking long distances from the farm to the market. They also sit for long periods of time and often without back support which possibly predisposes them to back pain. Most farmers in rural communities engage in non mechanized farming that entails prolonged trunk bending; this may explain why MSP are common among farmers.

It is interesting to note that majority of the participants, in spite of their low educational level attributed MSP to occupations and bad posture indicating a good knowledge of what causes MSP. However, the high prevalence of MSP in this community probably indicates that they do not know how occupation and posture cause MSP and what can be done to minimize the risk of MSP. There is the need therefore to provide health education on how to minimize the risk of MSP to the dwellers of this rural community.

The health seeking behaviour of Igbo-Ora adult residents is very poor. Majority used self-prescribed drugs and this may imply that they have uncontrolled access to drugs which should normally be prescribed by authorized persons. It appears that Government agencies in Nigeria including the Nigerian Agency for Food and Drug Administration and Control has a lot to do in controlling access to prescription drugs. Only a very small percentage of participants sought healthcare in the hospital, in spite of the comprehensive health centre located in the community. Unfortunately, this study did not attempt to find out what could be responsible for this. Further studies may throw light on this. The poor

health seeking behaviour of these rural dwellers indicates dire need for health education on proper health practices for MSP in this community.

CONCLUSION & RECOMMENDATION

Eight out of every 10 adult residents of this Nigerian rural community experience MSP in 12 months and low back pain is the most common MSP. Gender, age and occupation are associated with MSP in this community. Self-prescribed drugs are the most common healthcare practice among these rural dwellers. There is dire need for health education on how risk of MSP may be minimized and the correct healthcare practices in this Nigerian rural community.

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Declaration of competing Interest: We (the authors) declare that we do not have any competing interest.

References

1. Bone and Joint Decade website www.boneandjointdecade.org Accessed 10.15am, 11/03/10
2. Silverstein B. Work-related musculoskeletal disorders of the Neck, Back and Upper extremity in Washington State 1994-2002. Safety and Health Assessment and Research for prevention. Pp. 2.
3. Bohr PC: Efficacy of office ergonomics education. *Journal of Occupational Rehabilitation*; 2002; 10 (4): 243-255.
4. Jones JR, Huxtable CS, Hudgson JT. Self-reported Work-related Illness in 2004/2005 Results from the Labour Force Survey. www.hse.gov.uk/statistics 2.30pm, 18/09/09
5. Adedoyin RA, Idowu BO, Adegunodo RE, Idowu PA: Muscle Pain Associated with the Use of Computer System in Nigeria. *Internet Journal of Pain, Symptom Control and Palliative Care*; 2004; 3: 2
6. Udoye CI, Aguwa EN. Musculoskeletal Symptoms: A survey among selected Nigerian Dentists. *Internet Journal of Dental Science*; 2007; 5: 1
7. Adegoke BOA, Akodu AK, Oyeyemi AL: Work-related musculoskeletal disorders among Nigerian Physiotherapists. *BMC Musculoskeletal Disorders*; 2008; 9: 112.
8. Omokhodion FO, Umar SR, Ogunnowo BE: Prevalence of low back pain among staff in a rural hospital in Nigeria. *Occupational Medicine*; 2000; 50: 107-110.
9. Omokhodion FO, Sanya AO: Risk factors for low back pain among office workers in Ibadan, Southwest, Nigeria. *Occupational Medicine*; 2003; 53 (4): 287-289.
10. Gureje O, Akinpelu AO, Uwakwe R, Udofia O, Wakil A: Comorbidity and impact of chronic spinal pain in Nigeria. *Spine*; 2007; 32 (17): E495-500
11. World Health Organisation. Guidelines for conducting surveys on injuries and violence, edited by Sethi D, Habibua S, McGee K, Peden M, Bennet NS, Hyder AA, Klevens J, Odero W, Suriyawongpaisal P. WHO, 2004, Geneva.
12. Ogunlesi TO. Ibarapa, the district and its people in; Brieger, WR, Oyediran ABO. Twenty-five years of the Ibarapa Community health programme. African Press

Limited 1989, 5.

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