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Pain Characteristics, Activity Limitation and their Influence on Health-seeking Behaviours of Community-dwelling Older Adults with Osteoarthritis in Nigeria

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Abstract

Background: It is postulated that osteoarthritis (OA) patients' health-seeking behavior depends largely on the disease severity and loss of function. **Objective:** This study aimed to assess the pain characteristics, activity limitations, and health-seeking behaviors of older adults with OA in Nigeria. **Methods:** A cross-sectional survey was conducted among 230 purposively selected community-dwelling older adults in a semi-urban setting in Nigeria. Pain characteristics, activity limitations, and health-seeking behavior were assessed by an interviewer using the Chronic Pain Grade Scale, Western Ontario and McMaster Universities Arthritis Index, and Health-Care Seeking Behaviour Questionnaire, respectively. Data were analyzed using descriptive statistics and inferential statistics (chi-square and multiple regression) to predict factors influencing health-seeking behavior, and we set the alpha level at $p < 0.05$. **Results:** Pain at the knee (73.0%) was the most defining feature of OA, and it was typically severe (59.1%), frequent (51.3%), felt deep in the bone (47.0%), and associated with morning stiffness (27.4%). OA led to severe activity limitation (54.3%), and 51.7% of the respondents had an overall

negative health-seeking behavior. Furthermore, activity limitation was significantly associated with religion ($p=0.008$) and pain severity ($p=0.001$). Similarly, the age ($p=0.022$), sex ($p=0.006$), marital status ($p=0.005$), and ethnicity ($p=0.018$) were significantly associated with health-seeking behavior. In addition, health-seeking behavior was predicted by cost, preference, ethnicity, employment, marital status, and limitation inactivity. **Conclusion:** OA pain is prevalent among community-dwelling older adults, it imposes a severe limitation on activities of daily living, and sociodemographic factors influenced the health-seeking behaviors of patients with OA.

Keywords: Pain, Health-seeking behaviours, Limitations in Activities, Osteoarthritis, Nigeria

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Introduction

Osteoarthritis (OA) is the most common form of arthritis and the most prevalent musculoskeletal disorder (1) as well as one of the leading causes of pain and disability worldwide (2, 3). Typically, OA is characterized by pain, physical function limitations, impairment, and disability (4-6). The most commonly joint affected by OA is the knee, with a prevalence of 5.39%, followed by the hand (1.95%), and hip (1.61%) (6). The prevalence of OA increases with advancing age (7, 8). Thus, OA is the most common cause of chronic disability in older adults (9), with a consequent reduction in quality of life, constant pain experience, and limitations in the performance of daily tasks (5, 10). Approximately 20% of affected older patients have chronic pain with impairment in activities of daily living and mobility (11), and approximately 58.5% of them experience pain and disability (5). Higher pain perception among older patients with OA (12) seems to be linked with nociception changes, which increase with advancing age (13).

Many complex factors influence health-seeking practices (14). Ahmed and Omer (15) reported that adults seek independence, and their health-seeking behavior depends largely on the disease severity and loss of function. Some patients perceive OA as a natural part of aging that is not curable should be tolerated (16). However, some authors opined that many people might ascribe a mystical or biophysical etiology of OA and thus engage in pluralistic health-seeking behavior that involves vacillation among conventional, complementary, and alternative medicine (17-19). Although the literature is substantial on the prevalence, pain, and functional limitations of older persons with OA, the pattern and undercurrents of their health-seeking behaviors are less explored. Thus, the study's objectives were to assess pain characteristics, activity limitation, and their influence on the health-seeking behavior of older adults with OA.

Materials and methods

This is a cross-sectional study conducted in Ile-Ife, Nigeria, between March 17, 2020, and May 16, 2020. The sample size comprised 230 purposively selected

older adults 60 years and older living with OA. The inclusion criterion was being symptomatic for OA for at least 3 months.

Data were collected on a one-on-one basis by one of the authors, using an interviewer-administered questionnaire comprising four sections. The first section explores the demographic information of the respondents. Similarly, the second section assesses pain characteristics using the Chronic Pain Grade Scale (CPGQ) (20). CPGQ is a seven-item instrument designed to evaluate the severity of chronic pain categorized as grades 0 (no pain) to IV (high disability–severely limiting) by summing up the pain intensity and disability subscales. The third section of the questionnaire was adopted from the Western Ontario and McMaster Universities Arthritis Index (WOMAC) to assess activity limitation (21). The WOMAC contains 17 items that measure physical functions, with responses ranging from none to mild, to moderate, and to severe. The score for the section ranges from 0 (minimum) to 51 (maximum). Higher scores on the WOMAC indicate worse functional limitations, whereas lower scores indicate better performance of activities. The fourth section was adopted from the Health-Care Seeking Behaviour Questionnaire (HCSBQ) and assessed the respondents' health-seeking behavior (22, 23). It contains 11 items on a Likert scale of strongly agree, agrees, disagrees, and strongly disagree (1–4), wherein higher scores indicate positive health-seeking behaviors. In addition, respondents were asked whether they prefer a separate clinic or hospital to be devoted to the older adults, with response options of yes and no. We also asked if respondents consider the cost of purchasing health-care services as an impediment to their HSB, with response options of yes and no.

The study obtained ethical approval from the Human Research Ethics Committee of the Institute of Public Health, Obafemi Awolowo University (IPH/OAU/12/1476). In addition, the researcher also gave a detailed explanation to the respondents with assurance of anonymity and confidentiality, and written informed consent was obtained from the respondents.

Data analysis

Data were analyzed using descriptive statistics of frequency, percentages, and graphs. A test of association between variables was conducted with chi-square, whereas multiple regression was conducted to assess factors that predict health-seeking behavior. Stata version 14 (Stata Corp., College Station, TX, USA) was used for analysis, and alpha level was set at $p < 0.05$.

Results

The ages of the participants ranged from 60 to 99 years (mean, 76.37 ± 11.23 years). A large proportion of the respondents were in the 60- to 69-year age group (32.6%), female (83.3%), and from the Yoruba ethnic group (93.9%). These respondents were married (71.7%) and self-employed in different artisan jobs and petty trading (77.4%) (see Table 1).

Table 1. Sociodemographic data of the respondents (n=230)

VARIABLE	FREQUENCY (%)
Age	
60–69 years	87 (37.83)
70–79 years	53 (23.04)
80–89 years	50 (21.74)
90–99 years	40 (17.39)
Sex	
Male	31 (13.6)
Female	199 (86.5)
Marital status	
Living alone	65 (28.3)
Married	165 (71.7)
Religion	
Christianity	169 (73.5)
Islam	61 (26.5)
Ethnicity	
Yoruba	216 (93.9)
Igbo	9 (3.9)
Hausa	5 (2.2)
Employment status	
Working	178 (77.4)
Not working	52 (22.6)

The descriptions of the pain included the following: mostly occurred at the knee (73%), frequently occurred (51.3%), severe (59.1%), and the exacerbation of pain is at all times (37.8%). They also described the pain as deep within the bone (47.0%), associated with joint

swelling and stiffness (30.4%), and lasted for more than 3 months (30.0%). Overall, the majority (59.1%) of the respondents experienced severe pain (Figure 1).

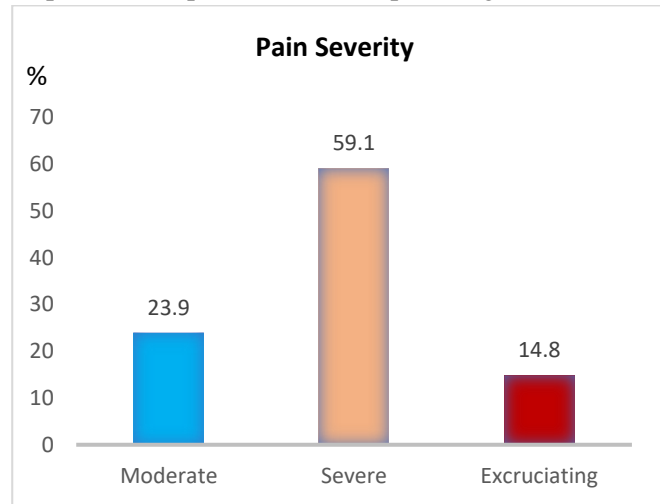


Figure 1. Pain severity of the respondents

The respondents had varying levels of limitations in the performance of daily activities. In sum, limitations category levels showed that 45.2% had severe limitations (Figure 2).

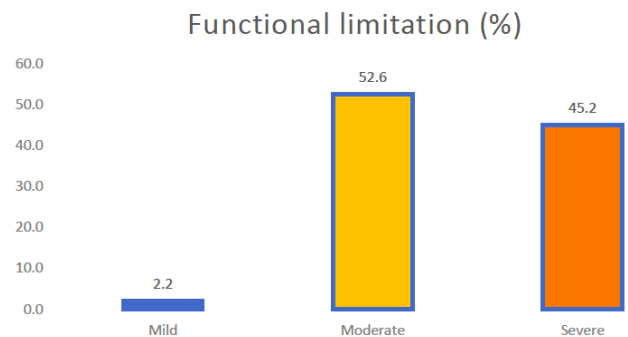


Figure 2. Functional limitation of the respondents

Furthermore, the severity of pain, exacerbation of pain, pain description, and joint swelling and stiffness were significantly associated with functional limitation (see Table 2). Similarly, Figure 3 presents the health-seeking behavior of the respondents; 55% had negative health-seeking behavior. A test of association between the various patterns of pain and functional limitation showed that severity ($p=0.001$), exacerbation ($p=0.009$), description of pain ($p < 0.000$), and presence of joint swelling and stiffness ($p=0.038$) were significantly associated with functional limitation (Table 2).

Table 2. Pattern of osteoarthritic pain and association between pattern of pain and functional limitation (n=230)

Variable	Frequency (%)	<i>P</i>
Location of pain		
Wrist	17 (7.4)	0.081
Hip	18 (7.8)	
Knee	168 (73)	
Ankle	27 (11.7)	
Frequency of pain		
Always	71 (30.9)	0.312
Frequently	118 (51.3)	
Occasionally	38 (16.5)	
Seldom	3 (1.3)	
Severity of pain		
Mild	5 (2.2)	0.001
Moderate	55 (23.9)	
Severe	136 (59.1)	
Excruciating	34 (14.8)	
Exacerbation of pain		
At all times	87 (37.8)	0.009
Morning	63 (27.4)	
Day	52 (22.6)	
Night	28 (12.2)	
Description of pain		
Grating	89 (38.7)	<0.001
Deep in the bone	108 (47)	
Unbearable	33 (14.3)	
Joint swelling and stiffness		
Yes	70 (30.4)	0.038
No	160 (69.6)	
Duration		
≤3 months	69 (30)	0.23
>3 to ≤6 months	50 (21.7)	
>6 to ≤1 year	46 (20)	

PAIN, LIMITATIONS, AND HEALTH-SEEKING BEHAVIORS IN OSTEOARTHRITIS

Table 3. Association of demographic characteristics and functional limitation and health-seeking behaviors

Variables	Functional Limitation		P	Variables	Health-Seeking Behaviors		P
	Moderate	Severe			Negative	Positive	
Age				Age			
60–69 years	62	41	0.135	60–69 years	67	36	0.022
70–79 years	24	33		70–79 years	23	34	
80–89 years	26	17		80–89 years	24	19	
90–99 years	14	13		90–99 years	13	14	
Sex				Sex			
Male	15	16	0.010	Male	10	21	0.006
Female	111	88		Female	117	82	
Marital status				Marital status			
Single	6	3	0.025*	Single	3	6	0.004*
Married	98	67		Married	83	82	
Widow	22	34		Widow	41	15	
Religion				Religion			
Christianity	84	85	0.010	Christianity	88	81	0.133*
Islam	42	19		Islam	39	22	
Employment				Employment			
Self-employed	103	77	0.510*	Self-employed	99	79	0.417*
Civil servant	4	4		Civil servant	6	2	
Retired	21	23		Retired	22	22	
Severity of pain				Ethnicity			
Moderate	39	21	0.009	Yoruba	115	101	0.024*
Severe	76	60		Others	12	2	
Excruciating	11	23		Limitation			
				Mild	4	1	0.491
				Moderate	64	57	
				Severe	59	45	
				Cost			
				No	61	14	<0.001
				Yes	66	89	
				Preference			
				No	54	28	0.016
				Yes	73	75	

Table 4. Logistic regression model predicting the health-seeking behaviors of older adults with OA (n=230)

*Fisher’s exact test.

Health-Seeking Behavior	Or	Se	Z	P>Z	95% Confidence Interval	
Cost	8.659	3.287	5.69	0.000	4.114	18.223
Preference	2.956	1.006	3.18	0.001	1.517	5.761
Ethnicity	0.117	0.097	-2.59	0.010	0.023	0.594
Employment	3.000	1.260	2.62	0.009	1.317	6.835
Marital status	2.340	0.871	2.28	0.022	1.128	4.852
Limitation in activity	0.837	0.263	-0.57	0.572	0.453	1.549

$X^2(6) = 59.4, p < 0.001, R^2 = 0.188.$

Health-seeking Behaviour

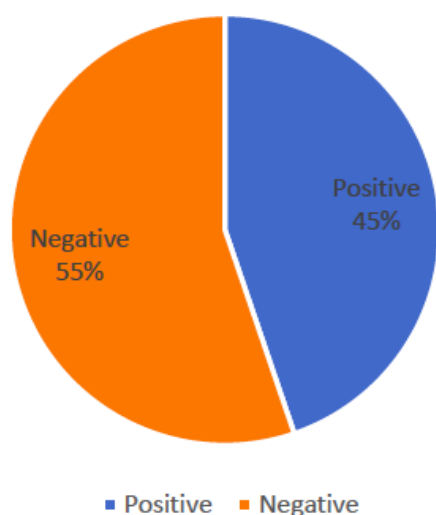


Figure 3. Health seeking behavior of the respondents

Furthermore, chi-square analysis was performed to determine the association between functional limitations in activities (dependent variable) and respondents' characteristics (independent variables). Results showed that religion ($p=0.008$) and pain severity ($p=0.001$) were significantly associated with functional limitations among the respondents (Table 3). Table 3 also presents the test of association between health-seeking behavior (dependent variable) and respondents' characteristics (independent variables) conducted using chi-square analysis. The result showed that age, sex, marital status, and ethnicity were significantly associated with health-seeking behavior (Table 3).

Table 4 shows the multiple regression model predicting the health-seeking behaviors of respondents. The overall model showed that it was significant ($p < 0.001$).

Predictors of health-seeking behavior among the respondents included cost, preference, ethnicity, employment, and marital status.

Discussion

This study assessed the influence of osteoarthritic pain on activity limitations and health-seeking behaviors of community-dwelling adults in Nigeria. Findings from this study revealed that most of older Nigerians with OA experienced pain in the knee. This finding supports Zamanzadeh et al. (24), who reported that most patients with OA have knee pain. Most of the patients in this study had severe pain intensity, comparable to the report by AbdulAziz et al. (25), who found that 55.7% of the patients had severe pain. Furthermore, patients in this study described their pain as deep within the bone (47.0%) and had swelling and stiffness. This finding agrees with an earlier report by Faronbi and Fajemilehin (5), who reported in their study the presence of chronic pain among the older adults population. One-third of the patients in this study had experienced pain for 3 months, and approximately another third experienced pain for >1 year. This finding affirms the literature on OA's chronicity (26-28), especially in older adults (29).

Gainful employment confers a steady flow of income and better access to health care, reducing functional limitations. The type of work done repeatedly has a huge impact on the prevalence of OA. Allen et al. (30) demonstrated an association between occupational tasks and knee OA. The author further argued the association of lifetime exposure to jobs involving specific occupational tasks with radiographic OA of the knee but not the hip (30).

Another finding from this study indicates that more than half of older patients with OA had negative health-seeking behavior. Sociodemographic factors such as

ethnicity, marital status, and employment significantly influenced their health-seeking practices. A study conducted by Sierakowska et al. (31) reported a contrary finding where 61- to 76-year-old respondents had a higher occurrence of pro-health behaviors. Similarly, Creedon and Weathers (32) argued that older patients with OA could easily accept their health and adopt a positive attitude toward the disease.

In this study, ethnicity has been identified to have a lesser influence on health-seeking behavior. This finding is, however, in contrast to earlier studies that showed that ethnicity strongly influenced health-care utilization (33). For example, Albert et al. (34) identified ethnicity as a factor for predicting health-seeking behavior, as minority groups with OA more frequently use over-the-counter drugs than Caucasian people. Other findings also showed that the first-generation minority was a risk factor for engaging in analgesic use to relieve pain from hip/knee OA (33). There is an apparent dearth of studies on the influence of sociodemographic factors on the health-seeking practices of Africans.

Other factors that significantly predict HSB among older adults include functional limitation, cost, and preference for specialized care. The results of this study have shown that the health-seeking behavior of older persons with OA is predicted by functional limitation, especially limitation in activities of daily living, and individuals may seek help for their problems only when the problems worsen. Virtuoso Júnior et al. (35) and Cornally and McCarthy (36) reported that increasing pain severity and disability were associated with help-seeking.

Hospital expenditure is one of the factors that has also been implicated as a determinant of health-seeking behavior. The findings of this study identified cost as a strong predictor of HSB among older adults with OA. This finding supports Menon and Mishra (37), who observed an association between cost and resource utilization among individuals with OA. Similarly, poverty has also been identified as a major determinant of health-seeking behavior in older adults (38, 39).

The findings of this study also established that older people expressed a preference for specialized care. In

this study setting, as with other public and private facilities in the country, older adults are not accorded any recognition and treatment whenever they approach the health-care institutions. Abdulraheem (38), Alghanim (40), and Job et al. (41) also established that convenient access enhances health-care utilization.

Limitation

The results of the current study should be considered in light of the study's limitation. The purposive sampling technique employed might limit its generalizability. Therefore, the generalization of the findings should be made with caution. However, the results from this study provide significant insight into the predictors of health-seeking behavior of older adults with OA pain in Nigeria.

Conclusion

The findings of this study established that individuals with OA experience considerable pain, which has a negative influence on their overall physical health and also limits their ability to function in daily life. They are more likely to engage in negative health-seeking behavior to find relief from pain. It is, therefore, necessary that evidence-based management of OA should be incorporated in community health services in all levels of health care. Community-dwelling adults living with OA must be identified and provided with interventions such as exercise, weight reduction, pharmacological interventions, and assistive devices for a healthy life.

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