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Unpacking the Pain: Understanding Barriers and Unmet Needs of Adults with Low Back Pain in a Southern Nigeria Outpatient Clinic

Obianuju Iheomamere Muoghallu[1], Akaninyene Mark[2], Tensaba Andes Akafa[3], Gloria Omonefe Oladele[4], Kingsley Iyoko Iseko[5]

[1]University of Uyo Teaching Hospital, Akwa Ibom, Nigeria; [2]Nigerian Police Medical Service State Headquarters, Uyo, Akwa Ibom, Nigeria; [3]Federal University Wukari, Taraba State, Nigeria; [4]Federal Medical Centre, Bida, Nigeria

[5]Limi Hospital Abuja, Nigeria

akafatensaba@gmail.com

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Abstract

Background: Low back pain (LBP) is a prevalent health issue leading to functional disability in adults. This study aimed to evaluate the barriers to care and unmet needs of adults with LBP and functional disability attending the General Out-Patient Clinic (GOPC) at the University of Uyo Teaching Hospital, Akwa Ibom State. The goal is to enhance quality of life by reducing disability and LBP burden through prevention, addressing barriers, and fulfilling unmet needs. Key barriers identified include limited access to healthcare, high out-of-pocket costs, inadequate insurance coverage, and a lack of understanding of LBP and self-management strategies. Methodology: Conducted at the GOPC, this cross-sectional analytical study involved 370 adult patients (18+ years) using systematic sampling. Data collection spanned two months, employing an interviewer-administered semi-structured Oswestry lumbar disability questionnaire. Analysis utilized IBM SPSS version 27, with

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frequency tables for pain patterns and chi-square tests to assess associations between body mass index (BMI) and LBP severity. Results: The mean age of respondents was 40.2 years. LBP was significantly linked to low function, with the association strengthening over time. Most respondents were classified as obese (BMI 25.0-29.9 kg/m²), and 56.7% reported high pain intensity. Activities like lifting weights and sitting exacerbated pain for 70.3% and 66.2% of respondents, respectively. The median pain score was 52, with significant differences noted ($p<0.001$). Alcohol consumption was reported by 39.6% ($p=0.005$), while 72.2% did not smoke. Respondents with LBP were 1.70 times more likely to experience functional disability compared to those without. Conclusion: LBP is strongly associated with functional disability among adults. Unmet needs include limited rehabilitation access, inadequate education on LBP, and insufficient support for self-management. Addressing risk factors, implementing multi-modal pain management strategies, and enhancing health education are essential for preventing functional disability.

Keywords: Barrier to care, Unmet need, Low back pain, Functional disability

INTRODUCTION

Low back pain (LBP) is defined as pain in the posterior area of the body extending from the 12th rib to the lower gluteal folds, with or without pain radiating to one or both lower limbs, lasting for at least one day (Global Burden of Disease, 2018). It is the leading global cause of years lost to disability, and its prevalence continues to rise with an aging population. LBP is a significant health issue associated with physical disability and reduced quality of life, encompassing multifaceted burdens such as pain, disability, caregiver strain, financial costs, and healthcare resource utilization, which create substantial barriers to care.

Various factors contribute to LBP and unmet needs, including high body mass index, smoking, older age, female gender, heavy physical work demands, sedentary lifestyles, low educational attainment, job dissatisfaction, and psychological issues like anxiety and depression. Accessibility barriers limit access to healthcare services, specialist care, and rehabilitation programs. Financial constraints, such as high out-of-pocket costs and inadequate insurance coverage, further complicate care. Structural barriers, including inadequate healthcare infrastructure and long waiting times, along with language differences and cultural attitudes, also hinder effective management of LBP.

Functional disability, defined as impairments in performing age-appropriate physical, mental, and social daily activities, is a significant consequence of LBP. It affects the physical, emotional, and social functioning of individuals, with an estimated 57 million years lived with disability attributed to LBP in 2016, a figure that has increased by over 50% since 1990. LBP is a leading cause of activity limitation and absenteeism from work, resulting in biophysical limitations that impair overall health and physical conditioning.

Research indicates that various causes and contributing factors lead to significant costs and barriers to care for those with LBP. Functional disability in chronic LBP can stem from psychological and occupational factors, impacting personal, work, and family life. Studies show that over 80% of individuals with functional disability experience moderate-to-severe impairment, leading to decreased physical activity and social engagement. Beliefs about pain management significantly influence functional ability, with those experiencing severe impairment often exhibiting external pain control beliefs linked to higher anxiety and depression levels.

Addressing the barriers to care and unmet needs of adults with LBP is essential for improving patient outcomes. The World Health Organization (2018) outlines multiple perspectives—biomedical, biopsychosocial, functional, economic, sociocultural, and healthcare systems—that must be considered to develop comprehensive strategies for managing LBP and its associated disabilities. Understanding these complex interrelations is crucial for tailoring effective interventions and enhancing the overall quality of life for those affected.

Aim: To explore the barriers to care and identify the unmet needs of adults experiencing low back pain and functional disabilities at the General Outpatient Clinic in UUTH.

Specific Objectives

1. Identify Barriers: Examine the obstacles faced by adults with low back pain and functional disabilities attending the General Outpatient Clinic.

2. Assess Unmet Needs: Determine the specific healthcare needs that remain unaddressed for these patients.

3. Evaluate Disability Relationship: Analyze the connection between the severity of low back pain and levels of functional disability among patients.

4. Predictive Factors: Investigate the predictive factors associated with low back pain and functional disability in adults seeking care at the clinic.

MATERIALS AND METHODS

Study Area: The University of Uyo Teaching Hospital (UUTH) is a prominent tertiary hospital located on the outskirts of Uyo city, the capital of Akwa Ibom State in Nigeria's South-South geopolitical zone. Covering 43 hectares, this impressive 1,200-bed facility is essential for delivering high-quality healthcare services to a population of approximately 6 million, based on the 2006 census. Established as a Federal Medical Centre in 1997, UUTH gained further recognition as a Teaching Hospital in 2007, underscoring its role in medical education and healthcare provision. The hospital not only meets the healthcare needs of Uyo residents but also serves as a vital referral center for primary and secondary facilities throughout the state.

Study Design : This research employed a descriptive cross-sectional analytical study design.

Study Population: The study population included all adult patients aged 18 years and older presenting at the GOPC of the UUTH.

Sample size determination: The sample size formula for cross-sectional study was used: $n=Z^2P(1-P)/D^2$ [10] Where n = minimum sample size for this study.Z =the standard normal deviate 1.96 corresponding to a 95% confidence interval P= prevalence of low back pain with functional disability from a study done in Calabar, Okokon et al was 38.2% [6] = 0.382 Q=1-P = the proportion of the population not suffering from the condition being studied. i.e. 1-0.382=0.618 . D= degree of precision at 0.05 . Substituting into the equation, gives .Therefore, $n= [(1.96)^2 *(0.382) * (0.618)] \div (0.05)^2$ $n = [(3.92) * (0.382) * (0.618) \div 0.0025$. Minimum sample size n = 370

Sampling technique: A systematic random sampling method was used to select 370 adult patients meeting the eligibility criteria. The clinic averages 520 patients with low back pain (LBP) per month, or about 130 per week. Over two months, 1,040 patients were seen (130 x 8 = 1,040), and 370 consenting participants were recruited, averaging 185 per month, 46 per week, and approximately 6 per day. The first participant was chosen using simple random sampling via a balloting method, and every 6th participant was recruited from the pool thereafter. To prevent double enrollment, each client's hospital blue card was tagged

with a colored sticker and assigned a serial number for easy identification, continuing until the desired sample size was met.

Method of Data Collection

Data was collected using an interviewer-administered questionnaire, primarily in English.The questionnaire gathered information on socio-demographic characteristics, awareness of symptoms and risk factors for low back pain, barriers to care, and self-care practices. The research team consisted of the researcher and two trained research assistants (resident doctors) that also assisted respondents without formal education in their local dialect.

Eligibility Criteria

- Inclusion Criteria: All adult patients aged 18 years and older presenting at the GOPC.

- Exclusion Criteria: Pregnant women, severely ill patients, individuals with spinal diseases, paraplegics, and those with traumatic spinal injuries.

Instrument for Data Collection

The questionnaire was divided into the following sections:

A. Socio-demographic characteristics: Basic information about the respondents, such as age, gender, education level, and occupation.

B. Visual Analogue Pain Scale (VAS): A tool to assess pain intensity.

C. Oswestry Lumbar Disability Questionnaire: A standardized tool to evaluate functional disability due to low back pain.

Data Analysis: Data entry and analysis were conducted using IBM SPSS version 27. Socio-demographic characteristics were summarized using frequency tables, while categorical variables were reported in percentages and proportions. Continuous variables were summarized using means and standard deviations or medians and interquartile ranges for skewed data. Functional disability was the outcome variable, with pain severity as the primary independent variable.

Ethical Considerations : Ethical approval was obtained from the Institutional Health Research and Ethical Committee, UUTH/AD/S/96/VOL.XX1/610. Permissions were secured from relevant hospital authorities, and written consent was obtained from all participants aged 18 years and older. The study adhered to ethical guidelines to protect the

rights and welfare of the participants, ensuring their confidentiality and voluntary participation throughout the research process. Additionally, the study ensured that participants were informed about the purpose of the study and their right to withdraw at any time without consequences.

RESULTS

Three hundred and seventy (370) adults participated in the study and provided responses to all the questions. The results obtained are shown below:

Table 1: Socio-demographic characteristics of the respondents

Variables	Frequency(n)=370	Percentage (%)
Age group		
18- 25	64	17.3
26-35	83	22.4
36-45	97	26.2
Above 45 years	126	34.1
Mean age 40.2 ±2.2SD		
Gender		
Male 202 54.6		
Female 168 45.4		
Religion		
Christianity 340 91.7		
Islam 26 7.3		
Others 4 1.0		
Educational Status		
None	82	22.2
Primary	98	26.5
Secondary	120	32.4
Tertiary	70	18.9

One hundren and twnety six (34.1%) were of age ranges from 40 years and above, with the mean age 40.2 years (±2.20 SD). A higher proportion of the respondents were males 202 (54.6%). The main form of religious expression among the participants was Christianity (93.10%). Many,120 (32.40%) had secondary education as their highest level of education (Table 1).

Table 2: Respondents' social parameters, Pain duration and BMI.

Variables	Frequency (n)= 370	Percentage (%)
Marital Status		
Married	180	48.7
Single	79	21.3
Divorced/separated	73	19.7
Widowed	38	10.3
Occupation		
Civil servant	85	22.9
Artisan	64	17.4
Trading	107	28.9
Farming	114	30.8
Duration of pain		
>3months	220	59.5
<3moths	150	40.5
BMI		
<18.5	48	12.9
18.5-24.9	61	16.6
25.0-29.9	153	41.4
>30	108	29.1

Majority, 180 (47.9%) of the respondents were married while many ,148 (39.4%) were into trading as a form of business followed by farming 136(36.1%). A higher proportion 220 (59.5%) of the respondents had pain of more than 3 months duration. A higher proportion 153 (41.4%) of the respondents were obese with BMI 25.0-29.9 kg/m^2 as in Table 2 above.

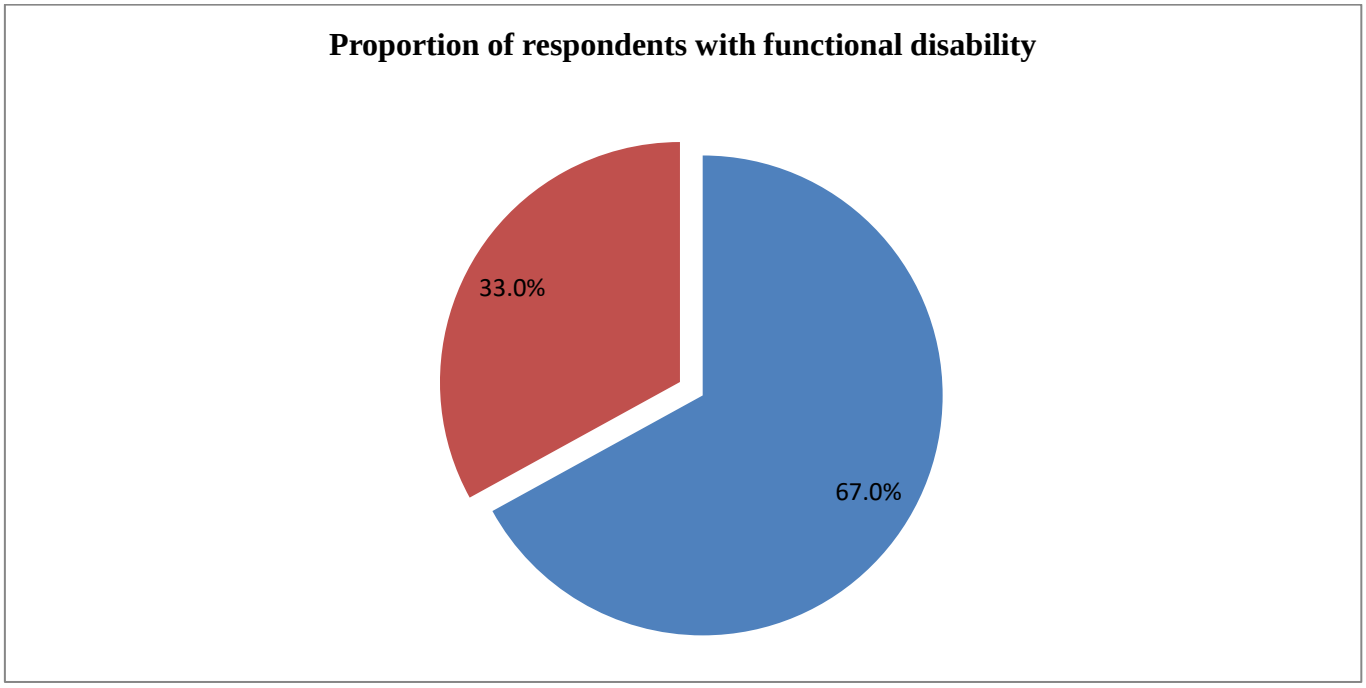


Fig1 shows proportion of respondents with low back pain and functional disability with a proportion of 33.00% that had functional disability.

Table 3: Grading of Visual Analogue threshold of pain among respondents

Scores/Grades	n=370	Frequency (%)	Tests/Statistics
None (0-1)	75	20.3	
Mild (1-3)	87	23.6	Fisher's exact
Moderate (4-6)	115	31.1	P<0.001*
Severe (7-10)	64	17.3	
Very Severe (>10)	29	7.7	
Median score [IQR]	52	8-14	MWU; P<0.001*

MWU=Mann Whitney; *= statistically significant

Table 3 shows the grades of grading of Visual Analogue threshold of pain among respondents using VAS scale. Overall, about one-fifths of the respondents did not experience pain 75 (20.3%). While a little above one fifth of the respondents had mild pain threshold 89 (23.6%). Similarly, a higher proportion of respondents had moderate pain threshold 115(31.1%).This difference was statistically significant (p<0.0001). The median pain score among the respondents was 52, significantly graded at range of 8-14; p<0.001).

Table 4 Risk Factors of Low Back Pain of the respondents

Variable Low back pain Total X2 *p*-value
Lifestyle factors Yes No
Alcohol intake
Yes 146 (39.6) 224 (59.4) 370 (100.0) 32.80 0.005
No 224 (59.4) 146 (39.6) 370 (100.0)
Cigarette smoking
Yes 103 (27.8) 267 (72.2) 370 (100.0) 28.02 0.001
No 267 (72.2) 103 (27.8) 370 (100.0)
BMI
Underweight/normal weight 160 (42.2) 210 (56.8) 370 (100.0)
Overweight/obese 210 (56.8) 160 (42.2) < 0.01

Table 4 shows the lifestyle factors among the respondents. A higher proportion of respondents 146 (39.6) agreed to have consumed alcohol (p=0.005). This was statistically significant ($\chi 2$=32.80, p= 0.005).). Furthermore, a proportion of respondents 267 (72.2) did not smoked cigarette. The difference was statistically significant ($\chi 2$=28.02, p= 0.001).

BMI; body mass index

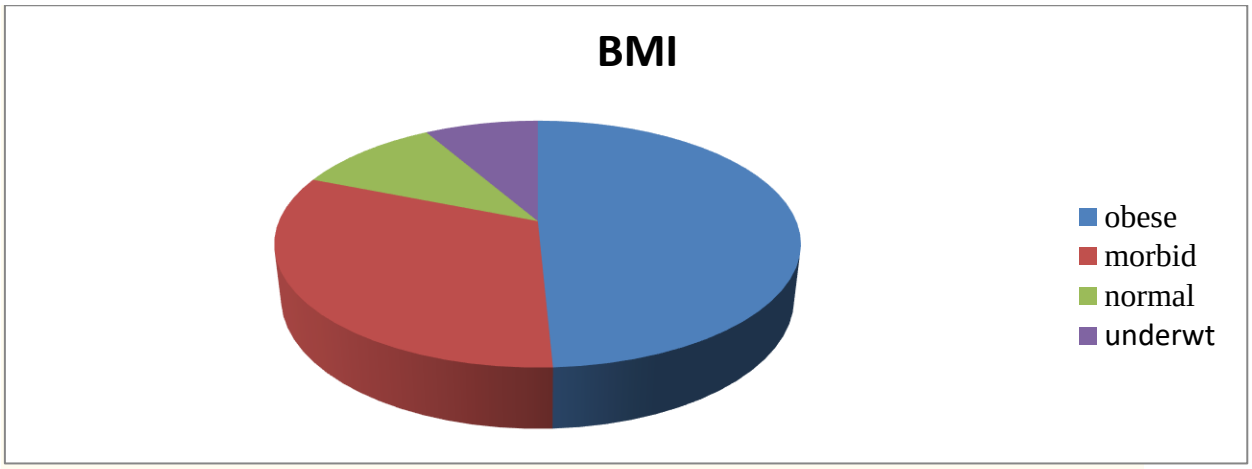


Fig2 shows proportion of respondents with measurement of Body Mass Index, BMI. A higher proportion 41.4% of the respondents were obese with BMI 25.0-29.9 kg/m^2 followed by morbid obesity with proportion of 29.1%

Table 5 Participant Oswestry LBP characteristics and functional disability (FD)

Characteristics	**LBP(n=57)**	**FD(n=33)**	**X^2 statistic**
Age, mean (SD)	40.35	31.77	1.22
Sex, n (%)			
Male	31 (54)	18 (42)	0.14
Female	26 (46)	15 (58)	
Pain intensity, n (%)			
Yes	22 (13)	0 (01)	4.97*
Lifting, mean (SD)	66 (6.8)	1.7 (3.7)	−5.77**
Pain in the past month, mean (SD)	5.9 (.4)	1 (1.8)	−36.39**
Pain at visit, mean (SD)	.5.6 (.9)	2 (1.7)	−27.10**
Pain interference with sitting, mean (SD)	3(1)	-(-)	
Pain interference with social life, mean (SD)	6 (2)	- (-)	-
Pain interference with standing, mean (SD)	11 (4)	- (-)	-
Pain interference with walking, mean (SD)	8 (7)	0 (-)	-
Pain interference with home making, mean (SD)	13 (9)	3 (5)	−8.95**

LBP: Chronic low back pain, FD: Functional disability **p<0.01 *p<0.05

Table 5 shows participant Oswestry LBP characteristics and functional disability (FD). Pain intensity, lifting mean SD, pain in the past month and Pain interference with home making, mean (SD) were significantly associated among respondents with functional disability.

Table 6 Frequency of low back pain risk factors and function disability

	Frequency of low back pain risk factors					
	Smoking	**Alcohol**	**Total**	**2**	**3**	**P for trend**
Participants	140	230	370	148	89	
Low function, n (%)	(37.8)	(62.2)	(100.0)	69 (46.6)	50 (56.2)	
Crude OR (95%CI)		1 (Ref.)	1.83 (1.28–2.61)	2.36 (1.62–3.45)	3.46 (2.18–5.50)	< 0.001
Adjusted OR (95%CI)		1 (Ref.)	1.77 (1.17–2.69)	1.74 (1.09–2.77)	2.79 (1.58–4.93)	0.001

Table 6 depicts frequency of low back pain predicting risk factors and function disability of the respondents. Respondents who had low back pain risk factors and functional disability had 1.70 times likelihood of experiencing functional. Respondents who had frequency of low back pain had 1.77 times likelihood of experiencing functional disability compared to those without (95% CI: 1.17-2.69).

DISCUSSION

The present study examined the barrier to care and unmet need of adults with LBP and functional disability attending the GOPC at UUTH. The mean age of respondents was 40.2 years ± 2.2. Adults over the age of 30 have a significantly increased risk of experiencing back discomfort. With older age, the pliable and rubbery tissues that make up the disks in the spine begin to deteriorate, which can cause back pain. People at any age can experience LBP, including children and adolescents. Most people experience LBP at some point in their lives. The peak in the number of cases occurs at 50–55 years, and women experience LBP more frequently than men. This study is in line with the above study

With modified Oswestry disability indices, Pain intensity, lifting mean SD, pain in the past month and Pain interference with home making, mean (SD) were significantly associated

among respondents with functional disability. This study was in consonance with other studies that recommended that associated risk factors with Disability in LBP patients can be evaluated, intervened and prevented.

The self-complete Leeds Assessment of Neuropathic Symptoms and Signs (S-LANSS) and Oswestry Disability Index (ODI) were used to assess the level of pain disability respectively. Findings from Ogendi et al (2018) study indicated that there exists an association between pain intensity (severe pain) and levels of disability (moderate and severe) (p value <0.001)

Maghbouli et al in a cross-sectional hospital based study done in Iran which was aimed at exploring the relationship between LBP and disability. The study was done on 238 eligible participants using the Oswestry lumbar disability questionnaire to assess disabilities and the Van Korf et al questionnaire to measure pain intensity through the Numerical Pain Rating scale (NPR) scale. The data collected were analyzed and the result showed a significant positive and uniform linear relationship between pain severity and disability in terms of age, gender and residency status (P<0.05). The conclusion from the above was that there is a direct relationship between the severity of low back pain and disability so that people who suffer from more low back pain have more functional disability in activities of daily living. More research to confirm this result was strongly recommended to be able to design more studies to determine risk factors of LBP and subsequent disability and design a proper intervention to prevent the condition.

. A rehabilitation program aiming at not only preventing functional disability but also reducing LBP may be more effective in maintaining the elderly's functional ability, which should be examined in future studies. Respondents who had low back pain had 1.70 times likelihood of experiencing functional disability compared with those without low back pain (95% CI: 1.18-2.44). Likewise, respondents who had < 2 years duration of low back pain had 1.27 times likelihood of experiencing functional disability compared with those with more than 2 years duration of low back pain (95% CI: 0.79-2.06). Respondents who had low back pain frequently had 1.77 times likelihood of experiencing functional disability compared to those without (95% CI: 1.17-2.69). Respondents who had low back pain risk factors and functional disability had 1.70 times likelihood of experiencing functional. Respondents who had frequency of low back pain had 1.77 times likelihood of experiencing functional disability compared to those without (95% CI: 1.17-2.69). More

research to confirm this result was strongly recommended to be able to design more studies to determine risk factors of LBP and subsequent disability and design a proper intervention to prevent the condition

CONCLUSION

The barrier to care and unmet need of adults with LBP and functional disability attending GOPC at UUTH is complex and bidirectional. LBP can lead to functional disability by limiting physical activity, reducing mobility, and impairing daily functioning. Conversely, functional disability can exacerbate LBP by increasing physical strain, promoting fear-avoidance behaviors, and reducing overall well-being.

Effective management of LBP and functional disability requires a multidisciplinary approach that incorporates physical therapy, pain management, and psychological interventions. Early intervention, workplace modifications, and promoting regular exercise and physical activity can also help mitigate the impact of LBP on functional disability.

Limitation: The study focused on one health facility. The findings therefore have limited generalization. A more elaborate study capturing more locations possibly in both urban and rural settings may be needed.

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Conflict of interest: We hereby declare zero conflict of interest in the study

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