Original Article

Disability in Adult Patients with Chronic Low Back Pain in a North Central Nigerian Hospital

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Abstract

Background: Chronic low back pain (CLBP) is a common health problem that is often associated with physical disability and reduced quality of life. Functional disability is the inability to perform age-approximate physical, mental and social activities of daily living. It is, therefore, pertinent to determine the prevalence of disability in patients with CLBP as this will help clinicians to look out for risk factors associated with disability and thus facilitate management decisions. **Aim:** The aim of this study is to determine the prevalence and level of disability in patients with CLBP. **Patients and Methods:** Patients with CLBP observed at the orthopaedic clinic of Benue State University Teaching Hospital, Makurdi from June 2016 to February 2017 were recruited for this study. A designed questionnaire was used to collect data. Oswestry low back pain disability questionnaire was used to assess the level of disability. **Results:** A total of 126 patients with CLBP were evaluated, consisting of 45 males (35.7%) and 81 females (64.3%) with a male:female ratio of 1:1.8. The prevalence of disability in patients with CLBP in this study was 78.6%. 66 (52.4%) of patients had a moderate disability, 32 (25.4%) of patients had a severe disability, 27 (21.4%) of patients had mild or no disability and only one patient (0.8%) was crippled. There was a significant association between the age and level of disability ($P = 0.001$). **Conclusion:** Disability in patients with chronic back pain is a common health problem in our environment. Determination of disability prevalence will create more awareness for the need to assess risk factors and evaluate the effectiveness of various treatment options.

Keywords: Disability, low back pain, prevalence

Introduction

Chronic low back pain (CLBP) is a common health problem in our environment with concomitant physical disability and reduced quality of life.[1] Low back pain is the leading cause of musculoskeletal disorders because it is both highly prevalent and usually lead to disability with which people live for the greater part of their lifetime.[2,3]

Functional disability is impairment in performing age-approximate physical, mental and social activities of daily living.[4,5] About 90% of cases of low back pain have no identifiable cause and are classified as non-specific low back pain.[6] Non-specific low back pain is known to have a relationship with depression and functional disability.[7] The global prevalence of general disability is the highest in Sub-Sahara African.[8] The most apparent difference in disability prevalence is between the developed and developing nations[9] with the most frequent cause of disability being musculoskeletal disorders.[9,10] Pain and loss of function associated with musculoskeletal conditions primarily lead to disability.

Access this article online

Quick Response Code:

Website: www.njotonline.org

DOI: 10.4103/njot.njot_29_18

Low back pain is the most prevalent musculoskeletal condition and the most common cause of disability in developed nations.[11] The lifetime prevalence of low back pain in developed countries reported to be up to 85%. Most of the reported studies on epidemiology of low back pain are restricted to high income countries and only very few reports from low-income countries like Nigeria. In the USA and Australia, low back pain prevalence ranges from 26.4% to 79.4%[12,13] This gave assumption of low prevalence of low back pain in Africa. Ogunbode *et al*.[14] reported a point prevalence of low back pain to be 46.8%. The prevalence of chronic back pain is between 9% and 21% and many studies have reported that low back pain is responsible for most causes of disability and absence from work.[15] Previous studies have

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How to cite this article: Kortor NJ, Iyor FT, Yongu WT, Elachi IC, Mue DD. Disability in adult patients with chronic low back pain in a north central Nigerian hospital. Niger J Orthop Trauma 2018;17:81-4.

reported the prevalence of disability to be between 11% and 76%.[16] Pain-related disability refers to difficulties to perform activities of daily living at home or work.[16,17]

There are many reports of the prevalence of disability in patients with CLBP in developed countries in the literature; however, information concerning the prevalence of disability among Nigeria patients with CLBP is scanty.[18-21] It is pertinent to know the rate of occurrence of disability among Nigerian patients with CLBP as it will provide a baseline of the magnitude of the problem, and thus an impetus for studies on its risk factors, as a guide to policy formulation. This study was designed to determine the prevalence and severity of disability among patients presenting with CLBP at a tertiary Hospital in Benue State, Nigeria.

Patients and Methods

This was a cross-sectional and descriptive study involving patients with CLBP who were attending the orthopaedic clinic of the Benue State University Teaching Hospital, Makurdi from June 2016 to February 2017. Patients for this study were recruited among patients who presented at the orthopaedic clinic with CLBP. Inclusion criteria were as follows: at least 3 months duration of pain and the age of 18 years and above. All patients who were being investigated for or confirmed with the following were excluded from the study: trauma to the spine, cancer, infections of the spine-like tuberculosis of the spine or pyogenic spondylitis.

Informed consent was obtained from all the participants and only one contact with the participants was required for the purpose of this study. Ethical approval was obtained from the Health Research and Ethic committee of Benue State University Teaching Hospital.

A structured questionnaire was used to collect data. Data obtained included age, sex, marital status, educational attainment, occupation, duration of pain and recurrence.

Oswestry disability index (ODI), version 2.0 was used to assess the level of disability. This index is derived from the Oswestry Low Back Pain Questionnaire. This instrument has been shown to be reliable and valid for use in patients with low back pain.[22-24] It is a self-administered questionnaire that is divided into ten sections designed to assess limitations of various activities of daily living. Each section is scored on a scale of 0–5, 5 representing the greatest disability. It focuses on the impact of pain on activities of daily living. Percentage disability is calculated by dividing the summed score by the total possible score multiplied by 100. The higher the percentage, the greater the perceived level of disability by the patients.

0%–20% (minimal disability), 21%–40% (moderate disability), 41%–60% (severe disability), 61%–80% (crippled) and 81%–100% (bed bound or exaggerating symptoms). Participants with ODI score of ≥20 are considered disabled.

Data obtained was analysed using statistical package for social sciences for the window, version 16 (IBM SPSS Inc., Chicago, USA). Normally distributed variables were expressed as simple frequencies and percentages. Test of significance for the discrete variables was done using Chi-square.

Results

A total of 126 patients with CLBP were recruited for the study, consisting of 45 males (35.7%) and 81 females (64.3%) with a male:female ratio of 1:1.8. The age of patients ranged from 20 to 70 years with the mean age of 46.75 years.

Among the age group of 50–69 years, 38 had moderate-to-severe disability, 19 had mild disability and one was crippled. There was significant association between age and level of disability ($P = 0.001$). Among the age group of 20–29 years, 4 had mild disability and none of the patients in this group was disabled. In the age group of 70–79 years, all the five patients had moderate disability. Among the patients aged 40–49 years, 18 had moderate-to-severe disability, 4 had mild disability and none was crippled [Table 1].

Figure 1 shows the level of disability of patients with CLBP. A total of 66 (52.4%) of cases had moderate disability, 32 (25.4%) of cases were severely disabled, 27 (21.4%) had mild disability and only 1 (0.8%) patient was crippled. According to the criteria adopted to characterise disability (ODI score), 99 patients in this study were considered disabled; thus, the prevalence of disability in this study is 78.6%.

Majority of patients 97 (77.0%) of patients were married, 16 (12.7%) of cases were widowed and 13 (10.3%) were single. Among the married patients, 77 had moderate-to-severe disability, 20 had mild disability. Among the single patients, 9 had moderate-to-severe disability whereas 4 had mild disability. Among the widowed patients, 12 had moderate disability, 3 had mild disability and one was crippled [Table 2]. There was a significant association between marital status and level of disability ($P = 0.017$).

With regard to the level of disability and educational attainment, 28 patients had no formal education while 20, 31 and 47 patients had primary, secondary and tertiary level

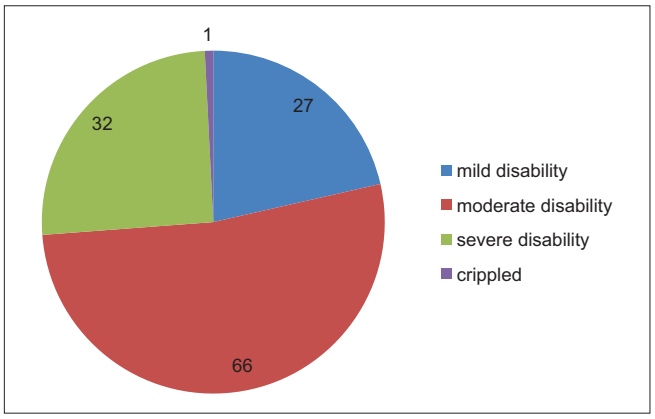

Figure 1: Level of disability in patients with chronic low back pain

Table 1: Age distribution and level of disability

Age group (years)	Frequency	Level of disability				
		Mild disability	Moderate disability	Severe disability	Crippled	Percentage
20-29	4	4	0	0	0	3.2
30-39	20	0	16	4	0	15.9
40-49	22	4	9	9	0	17.5
50-59	33	10	11	11	1	26.2
60-69	42	9	25	8	0	33.3
70-79	5	0	5	0	0	4.0
Total	126	27	66	32	1	100.0

of education, respectively. Among the uneducated patients, one was crippled, and 27 had moderate-to-severe disability. Out of 47 patients with tertiary level of education, 36 had moderate-to-severe disability and 11 had mild disability. Out of 31 patients with secondary education, 18 had moderate-to-severe disability and 13 had mild disability. Out of 20 patients with primary education, 17 had moderate-to-severe disability and 3 had mild disability [Table 3]. There was statistically significant association between level of educational attainment and level of disability ($P = 0.002$).

In terms of employment status, 40 (31.7%) were employed, 42 (33.3%) were self-employed and 44 (35.0%) were unemployed. Among the employed, 22 had moderate-to-severe disability and 18 had mild disability. Out of 42 self-employed patients, 37 had moderate-to-severe disability and 5 had mild disability. Out of 44 unemployed patients, 39 had moderate-to-severe disability, 4 had mild disability and one was crippled [Table 4].

Table 2: Marital status and level of disability

Marital status	Level of disability				
	Mild disability	Moderate disability	Severe disability	Crippled	Total
Single	4	4	5	0	13
Married	20	50	27	0	97
Widow	3	12	0	1	16
Total	27	66	32	1	126

Table 3: Educational attainment and level of disability

Education	Level of disability				
	Mild disability	Moderate disability	Severe disability	Crippled	Total
None	0	19	8	1	28
Primary	3	10	7	0	20
Secondary	13	17	1	0	31
Tertiary	11	20	16	0	47
Total	27	66	32	1	126

Table 4: Occupation and level of disability

Occupation	Level of disability				
	Mild disability	Moderate disability	Severe disability	Crippled	Total
Employed	18	17	5	0	40
Self employed	5	18	19	0	42
Unemployed	4	31	8	1	44
Total	27	66	32	1	126

Discussion

This study found the prevalence of disability among patients with CLBP to be 78.6%. This is higher than disability prevalence of 65% reported by Salvetti Mde *et al*.[21] who did a multicentre analysis of adult patients with CLBP. Similar lower disability prevalence of between 40% and 56% were also observed by Barry *et al*. and Webb *et al*.[15,16] This high prevalence of disability in individuals with CLBP highlight the high disabling potential of this condition. Another hospital-based study reported a higher prevalence of 95.16% in adult inpatients.[20] This variation in disability prevalence found in this study and other reported studies may be attributed to different definitions of disability by different authors. In this study, 77.8% of participants with CLBP have moderate-to-severe disability. This is similar to the findings in a study done by Salvetti Mde *et al*.[21] who found prevalence of moderate-to-severe disability to be 80.7%. This high frequency of moderate-to-severe disability found in this study may be due to the fact that the study sample comprised only hospital-based individuals with CLBP, a very common condition known to have high disability and crippling potentials. However, Walsh *et al*.[18] reported lower disability prevalence of 49% when they evaluated disability in workers with musculoskeletal disorders.

There was a significant relationship between marital status and level of disability in this study ($P = 0.017$). Married patients were more affected than single and windows put together. A similar finding was reported by Takur *et al*.[20] This may be attributed to the fact that daily activities of married persons require repeated bending, lifting and pulling movement of the spine may aggravate low back pain. The only observed case of crippling disability in this study was among the widows. The explanation for this may be because of the high demand of burden of household activities without the supportive assistance from their spouses.

A strong relationship was observed between level of disability and educational attainment. Patients with tertiary level of education were more affected than those with primary and secondary level of education. This differs from findings reported by previous authors that observed higher prevalence ratio of disability among the less educated patients.[20,21]

There was no significant relationship between employment status and level of disability in this study, even though employed patients had lower prevalence of disability as compared to the unemployed and self-employed. This finding is similar to the study done by Swinkels-Meewisse *et al*.[6] who observed that patients without paid jobs have higher chance of developing disability as compared to patients who are employed. However, Salvetti Mde *et al*.[21] observed the prevalence of disability among patients with paid job to be 2.5 times higher than those without paid jobs.

Limitation of study

This study was limited by restricted population exposure. The recruitment of patients was only done in orthopaedic out-patient clinic.

Further research is needed to find out associated risk factors associated with disability in CLBP and to evaluate different intervention modalities.

Conclusion

Disability in patients with CLBP is a common health problem in our environment. The high prevalence of disability in patients with CLBP in this study calls for more studies to determine the risk factors for disability in these patients.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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