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Sociodemographic Correlates of Health Related Quality of Life in Subjects with Non-specific Low Back Pain Among Nigerians

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Abstract

INTRODUCTION: Low back pain (LBP) is characterized by high incidence of poor self-rated health. This study investigated socio demographic correlates of health-related quality of life (HRQoL) in subjects with LBP. Two separate self-rated questionnaires (the socioeconomic status questionnaire (SSQ) and generic SF-36 questionnaire) were administered to each of the participants to evaluate both socioeconomic statuses (SES) and HRQoL respectively. METHODS: A total of 100 subjects with non-specific LBP of mechanical origin, aged 21-70 years participated in this study. Relationship between HRQoL and socio demographic variables (age, gender, marital status, clinical characteristic of morbidity and SES) was analysed using Pearson product moment coefficient of correlation, and the differences in HRQoL across categories of SES were analysed using one way analysis of variance (ANOVA). RESULTS: The outcome of this study indicated that SES is the only socio demographic variable correlating significantly ($p<0.05$) with all the domains of HRQoL. In specific terms, the outcome suggested that low SES is associated with poor HRQoL components. However, old age, female gender, being single and chronic LBP were all found to associate poorly with HRQoL ($p>0.05$). CONCLUSION: This study therefore concluded that in this population the most important determinant of HRQoL in LBP patients is SES. The implication of this finding is viewed in three different perspectives; first poor SES could precipitate the onset of initial episode of LBP, second poor SES might lead to poor rehabilitation outcome and long standing LBP can precipitate low SES.

Keywords

Health Related Quality of Life, Pain, Socioeconomic Status

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1. Introduction

Low back pain (LPB) is one of the common disorders seen by health providers today; it is often chronic and recurrent in nature [1]. LBP has been regarded as the most common musculoskeletal problem in the world, which affects people across various strata of the society from laymen in the street to health care providers in the health institution [2]. It was reported that from adolescence to adulthood, 80-85% of people are suffering from this ailment in the modern world [3]. It spreads across the populace including, the elderly, sedentary workers including the chief executives, professional drivers, motor cyclists and weight lifters are all apt to develop LBP at one time or the other [6]. Low back pain is a common symptom of various clinical entities because it can occur alone or in association with other somatic complaints [4-6]. The patients with LBP not only suffer from physical discomfort, but also functional limitation that might cause disability and interfere with their quality of life. [7-8]. Therefore, it is important to assess the disability status and quality of life in persons with LBP to characterize the natural history of such condition, assess treatment effectiveness, and develop appropriate health and

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disability policy [9].

World Health Organization [10] defined health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. HRQoL is a core component of health which has been defined as a concept representing individual responses to the physical, mental, social effects of illness on daily living and it is believed to influence personal satisfaction with life circumstances [11]. The purpose of measuring HRQoL is to discover health in terms of functional status, well-being, associated burden of disease and relative benefits of alternative treatments [12]. Age, gender, ethnicity as well as acute and chronic clinical problems have been found to influence HRQoL [13-16]. Socioeconomic factors have been reported to be minimally related to HRQoL in low back pain subjects in Britain and Italy [17-19].

The major reason behind the rapid development of quality of life measure in health care has been the growing recognition of the importance of understanding the impact of health care intervention on patients' lives rather than their body. This is particularly important for patients with chronic, disabling or life threatening diseases who live without the expectation of care and have conditions that are likely to have impact on their physical, psychological and social wellbeing [20]. Several studies have been conducted in developed countries such as Britain, Australia, Italy, Switzerland, and Netherlands to bring forth the correlates of HRQoL in patients with LBP and some of these studies were of the view that physical domain, psychological domain, pain intensity, socio demographic factors such as ethnicity, SES, age, gender and education are significant correlates of HRQoL in patients with LBP [9, 21-24]. A similar study also revealed that LBP in adolescent is a prevalent symptom with overall low associated disability and little effect on HRQoL [21]. Furthermore, many US studies reported a link between socio demographic factors such as ethnicity, SES, linguistic status, and education and poor HRQoL in LBP subjects [17-19]. There is very little information about the sociodemographic correlates of HRQoL in LBP subjects in developing countries [25]. This study was carried out to determine the correlations between sociodemographic variables and HRQoL as well as determine the variables that have the most significant correlation with HRQoL in LBP subjects in Nigeria.

2. Materials and Method

The population for this study included subjects with LBP of mechanical origin attending rehabilitation program in three tertiary health institutions in Kano (Aminu Kano Teaching Hospital (AKTH), Murtala Muhammed Specialist Hospital (MMSH), and National Orthopedic Hospital, Dala) using judgmental sampling technique. These centers equally served as the project sites. A total of 100 patients, age range 21-70years were sampled out of the population of LBP patients attending the above mentioned health institutions. The study protocol was explained to all of the respondents and each of the recruited sought their consent. The inclusion criteria were:

1) The LBP must be of mechanical origin
2) The respondents should be within the age range of 21 – 70 years
3) The respondents must be attending rehabilitation programme in any of the three tertiary health institutions in Kano (AKTH, MMSH & NOH).

Ethical approvals for this study were obtained from the ethical committees of AKTH and NOH (as attached)

The LBP patients in the above mentioned health institutions were many but some were not of LBL of mechanical origin and therefore were not part of the study and however the total number of patients with LBP of mechanical origin that were attending rehabilitation programmes within the specified age range in those health institutions was about 119 following the conduct of the pilot study and from which one hundred (100) respondents were sought. The questionnaire was administered face to face by the researcher and the rate of retrieval as 100%.

Health related quality of life (HRQoL) was assessed using SF36 questionnaire. The SF-36 is a 36 items tool structured into 8 domains, namely; physical functioning (PF), role limitations due to physical health problems (RP), bodily pain (BP), general health perceptions (GH), vitality (VT), social functioning (SF), role limitation due to emotional problems (RE), and mental health (MH). Responses vary from dichotomous (yes or no) to six point verbal rating scale (ordinal). All items in this tool were scored on a scale of0 to 100; with 100 representing the highest level of functioning possible. Aggregate scores were compiled as a percentage of the total points possible. The scores from those questions that address each domain of functional health status were aggregated and then averaged, to arrive at a final score within each of the 8 domains. The reliability and validity of SF 36 have been determined in literatures [26-27]

Socioeconomic status of the respondents was measured using socioeconomic status questionnaire (SSQ). The SSQ was adopted from a previous study [28] as modified by Balogun et al [29] which has been validated by three different professionals; sport psychologist, sociologist and exercise physiologist and the total score of the items was calculated to be 60 which was used to categorise the respondents into groups of different SES (Low, middle and high) with ranges

of ≤19, 20-40, and 41-60 respectively.

3. Data Analysis

The data obtained from this study were analysed using both descriptive and inferential statistics. The sociodemographic characteristics of participants were summarized using frequencies and percentages (such characteristics include: age, gender, marital status, clinical characteristics of morbidity and SES) while mean and standard deviation were used to describe domains of HRQoL. Relationship between HRQoL and sociodemographic variables was analysed using Pearson product moment coefficient of correlation, and then differences in HRQoL across categories of SES were analysed using one way analysis of variance (ANOVA). All analyses were performed at 0.05 alpha levels using the Statistical Package for the Social Sciences (SPSS, version 15.0).

4. Results

A total one hundred (100) non-specific low back pain patients participated in this study, of which females constitutes larger part of the respondents 59%. Most LBP patients that participated in this study were between the age of 21-30 years (35%), while the least were of the age of 61-70 years (n=10, 10%), most respondents were married (n=61, 61%) and majority of the participants have chronic LBP (n=59, 59%). These are all shown in table 1.

Table 1. Demographic Variables and Clinical Characteristics of Morbidity of Participants.

Variables	n (%)
Age	
21-30	35(35)
31-40	22(22)
41-50	16(16)
51-60	17(17)
61-70	10(10)
Gender	
Male	41(41)
Female	59(59)
Marital status	
Married	61(61)
Single	39(39)
Clinical characteristics of morbidity	
Acute	23(23)
Sub-acute	18(18)
Chronic	59(59)

n=frequency within a group or subgroup, %=percentage within a group or subgroup.

In the table 2 below, majority of the participants were from middle socioeconomic class (55%) while those from high socioeconomic class have the lowest percentage (7%).

Table 2. SES and HRQoL profile of respondents.

Variables	n(%)	M ± SD
SES		
Low	38(38)	--
Middle	55(55)	--
High	7(7.0)	--
HRQoL		
GH		62.59±23.14
PF		66.35±23.49
RP		53.25±35.11
RE		53.91±38.18
SF		57.90±26.90
BP		51.70±20.79
ME		60.79±20.12
VT		62.83±18.52

n=frequency within a group or subgroup, %=percentage within a group or subgroup, M± SD=mean± standard deviation, SES=socioeconomic status, HRQoL= health related quality of life, GH- general health perceptions, PF-physical functioning, RP -role limitations due to physical health problems, RE- role limitation due to emotional problems, SF-social functioning, BP-bodily pain, ME- mental health, and VT- vitality.

The table 3 below shows that all sociodemographic variables except SES did not correlate significantly with all domains of HRQoL

Table 3. Correlations between Health-Related Quality of Life Domains and Sociodemographic Variables.

	Age	Gender	CCM	MS	SES	GH	PF	RP	RE	SF	BP	ME	VT
Age	1												
Gender	0.051	1											
P	0.614												
CCM	0.033	0.165	1										
P	0.742	0.100											
MS	0.426*	0.167	0.149	1									
P	0.001	0.096	0.139										
SES	-0.074	0.112	0.003	0.135	1								
P	0.464	0.265	0.975	0.181									
GH	-0.107	0.063	-0.078	0.069	0.436*	1							
P	0.292	0.535	0.440	0.498	0.001								
PF	-0.090	-0.104	-0.180	-0.110	0.363*	0.646	1						
P	0.375	0.304	0.073	0.276	0.001	0.001							
RP	-0.093	-0.053	-0.014	-0.028	0.325*	0.425*	0.600	1					
P	0.358	0.598	0.886	0.780	0.001	0.001	0.001						
RE	-0.032	-0.066	-0.026	0.037	0.297*	0.500*	0.591*	0.780*	1				
P	0.751	0.516	0.796	0.711	0.003	0.001	0.001	0.001					
SF	-0.129	-0.096	-0.015	0.044	0.298*	0.472*	0.497*	0.684*	0.770*	1			
P	0.200	0.343	0.879	0.660	0.003	0.001	0.001	0.001	0.001				
BP	-0.097	-0.158	-0.193	0.036	0.295*	0.370*	0.439*	0.528*	0.657*	0.750*	1		
P	0.336	0.118	0.055	0.722	0.003	0.001	0.001	0.001	0.001	0.001			
ME	-0.026	0.040	0.027	0.093	0.359*	0.318*	0.368*	0.492*	0.540*	0.591*	0.467*	1	
P	0.794	0.692	0.792	0.356	0.001	0.001	0.001	0.001	0.001	0.001	0.001		
VT	-0.142	-0.016	-0.158	0.057	0.276*	0.431*	0.529*	0.540*	0.636*	0.595*	0.539*	0.631*	1
P	0.159	0.876	0.116	0.570	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

CCM-clinical characteristics of morbidity, MS-marital status, SES-socioeconomic status, GH- general health perceptions, PF-physical functioning, RP -role limitations due to physical health problems, RE- role limitation due to emotional problems, SF-social functioning, BP-bodily pain, ME- mental health, and VT- vitality. Correlation is significant at 0.05α level, critical $r_{0.05,100}$=0.1946.

One way analysis of variance conducted to determine differences in HRQoL across classes of SES indicated significant difference across classes of SES in all domains of HRQoL. These significant differences was however found to exist between patients from low and middle socioeconomic classes, between patients from low and high socioeconomic classes and between patients from middle and high socioeconomic classes as shown in table 4 below. This may imply that high socioeconomic class might be associated with better HRQoL than middle and low socioeconomic classes, and low socioeconomic class might be associated with having poorer HRQoL than middle socioeconomic class in LBP subjects.

Table 4. ANOVA Summary Table for Differences in HRQoL Domains across Classes of SES.

Variables	Low M±SD (n=38)	Middle M±SD (n=55)	High M±SD (n=55)	F	Prob.
GH	50.09±20.711	69.01±21.29	80.00±19.86	11.719	.000*
PF	55.58±23.07	72.05±21.66	79.99±18.66	7.713	.001*
RP	39.47±36.59	60.00±32.13	75.00±25.00	5.795	.004*
RE	41.22±36.70	59.24±37.90	80.95±26.22	4.717	.011*
SF	49.21±26.03	61.27±27.01	78.57±10.69	4.827	.010*
BP	45.52±21.14	53.63±19.66	70.00±15.27	4.997	.009*
ME	51.48±21.24	65.87±17.55	71.42±14.38	7.718	.001*
VT	56.46±19.72	66.14±17.51	71.42±07.38	4.125	.019*

M± SD=mean± standard deviation, n=frequency within a group or subgroup, prob=probability, SES=socioeconomic status, GH- general health perceptions, PF-physical functioning, RP -role limitations due to physical health problems, RE- role limitation due to emotional problems, SF-social functioning, BP-bodily pain, ME- mental health, and VT- vitality. Critical $F_{2,97}$=3.15 for socioeconomic status categories.

5. Discussion

This study was carried out to examine the relationships between health related quality of life and sociodemographic variables among Nigerians with low back pain. It was observed that only SES had significant association with HRQoL. Sociodemographic factors like age, gender, marital status, clinical characteristics of LBP morbidity had associations with HRQoL but such associations were not significant. While age, gender and clinical characteristics of morbidity were negatively related to HRQoL, SES and marital status were found to show positive relationship with

HRQoL.

The outcome of this study shows a positive and significant influence of SES on HRQoL, and specifically indicating that low SES is associated with poor HRQoL as earlier being reported in previous studies elsewhere. In a study investigating predictors of HRQoL in patients with LBP, it was reported that SES is a significant predictor of HRQoL (30). It has also been shown that low SES associates significantly with poor HRQoL [23]. Furthermore, another study reported that HRQoL differs significantly across classes of SES [31]. This factor (high SES) plays a vital role in general wellbeing as such it is not a surprise that the individuals with better SES equally have better HRQoL. This suggests that low SES may contribute to a decline in rehabilitation outcome of LBP subjects thereby resulting into poor HRQoL. This could possibly be due to reduced access to and use of medical care as well as difference in lifestyle among the low socioeconomic group.

Marital status was found in this study to have positive correlation with HRQoL though such was insignificant, implying that being married would result into a better HRQoL. Being married suggests care and support from spouses. There is continuous support and care for each other and such a support might include reminding the spouse of ingestion of medication at the right time, support in settling hospital bill, remainder on activity to be carried out and those to be avoided; all these would go a long way improving the HRQoL. Previous studies have reported similar findings suggesting marital status influencing HRQoL in LBP subjects [24, 30-31].

The negative relationships between age, gender and clinical characteristics of morbidity and HRQoL suggest that younger age, being a male and having acute LBP are associated with better HRQoL. These by implication mean younger individuals with LBP might present with better HRQoL which of course might not be a surprise since younger age is associated with better activity level and better lifestyle characteristics. In the same way, male gender being better in HRQoL might equally suggest better activity characteristics and lifestyle factors among males with LBP. Chronic LBP is characterized with disabling and devastating lifestyle and this might suggest why better HRQoL is seen in acute LBP subjects in this study. These findings are supported by the findings from another study in which female gender, old age and chronicity are factors posited to influence delays in seeking treatment and, consequently, to adversely affect HRQoL [31]. However, previous studies have reported that age, gender, clinical characteristics of morbidity are significant correlates of HRQoL in patients with LBP [33, 9, 21, 7, 34] thereby contrasting the above findings in which they were found to be insignificant. This contrasting finding might be as a result of variation in study methodology, including subject characteristics, differences in measuring instruments of HRQoL, cultural differences and the patients' sample size.

STRENGTHS AND LIMITATIONS

A major strength of this study is the representativeness of the sample population. This study was carried in three different research settings that provide health care delivery to the residents of the most populous state in Nigeria, Kano State. These hospitals provide health care services to people of different religious, ethnic and social affiliations. We can boldly say that our population sample represented Nigerians. One of the limitations of this study is the cross sectional nature of the data collected which might not allow generalisability of our findings. Also, another limitation is the non-probability sampling techniques employed in recruiting the participants for this study.

6. Conclusion

Although age, clinical characteristics of morbidity, gender and marital status had association with HRQoL but they could not determine HRQoL in LBP subjects. Socioeconomic status (SES) plays an important role in determining HRQoL in LBP subjects (i.e. SES is a predictor of HRQoL in LBP subjects). The use of HRQoL measures in health care is important in understanding the impact of health care intervention on patients' lives rather than their body, without which treatment may be deemed successful despite poor psychological functioning or adjustment to illness. Therefore HRQoL measures, especially this should be incorporated into clinical practice and the results should be discussed in a multidisciplinary team approach and clinical review meeting.

Recommendations

This study showed that there was a positive and significant correlation between SES and HRQoL. It is therefore recommended that SES should be taken into consideration during rehabilitation. Further study should be carried out on sociodemographic correlates of HRQoL in LBP subjects using a larger sample size from different hospitals across the northern states of Nigeria using longitudinal method. Also more studies should be carried out using different types of research tools and outcome measures. Health related quality of life measure should be introduced into clinical practice and there is a need for the training of the clinicians/ clinical staff in using and interpreting the outcome measures.

Declaration of Conflicting Interest

The authors declared no potential conflicts of interest with respect to the research authorships, and/or publication of this article.

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