Original Article

The Impact of Chronic Low-Back Pain on Quality of Life among Samples of Iraqi Patients: A Cross-Sectional Study

Nadia Ayad Mohammed Jawad, Mohammad Hadi Alosami[1], Zainab Fadhil Mahdi[2]

Department of Rheumatology, Merjan Teaching Hospital, Babylon, [1]Department of Rheumatology, College of Medicine, University of Baghdad, Baghdad, [2]Department of Rheumatology, Kirkuk General Hospital in Kirkuk, Kirkuk, Iraq

Abstract

Background: The term "chronic pain" refers to discomfort that lasts longer than 3–6 months. Particularly in industrialized nations, low-back pain (LBP) and its accompanying limitations are becoming a rising public health concern. Disability is the inability to do an activity in a way that is appropriate for a human being or within their normal range. **Objectives:** The aim of this study was to examine the relationship between sociodemographic characteristics and pain severity and quality of life in chronic LBP (CLBP) patients from Iraq. **Materials and Methods:** The study was carried out between September 2020 and January 2021, involving 100 participants conveniently selected in the rheumatology unit at Baghdad Teaching Hospital/Medical City, Iraq. Data were collected using a questionnaire that consisted of the sociodemographic variables, the short form 36 score (SF-36), and the numerical pain score. The Statistical Package for Social Sciences was used for the statistical analysis. **Results:** In the study, there were 100 patients with persistent LBP, ranging in age from 17 to 58, with a mean (standard deviation [SD]) age of 45.54 (11.36) years. About 54% of them were female. Approximately 72% were married, and the highest percentage (40%) had a secondary educational level. The individuals under study had a mean body mass index (BMI) of 28.61 kg/m^2. Nearly 12% of them were current smokers, and 46.0% were housewives. A higher mean Numerical Pain Score was reported among current smokers (P = 0.016). A nonsignificant difference in numerical pain score has been noted in relation to gender, age, marital status, occupation, BMI, and educational level (P values of 0.876, 0.06, 0.392, 0.307, 0.139, and 0.664, respectively). This study also revealed a low total score for quality of life among participants with increasing age, retired or not working, and widowed patients. **Conclusion:** Participants' quality of life is significantly impacted by CLBP. On both the total level of quality of life and the mental area, it has a very adverse effect.

Keywords: Chronic low-back pain, quality of life, impact

Introduction

Pain or discomfort between the 12th rib and above the gluteal sulcus, with or without radicular pain, is defined as low-back pain (LBP).[1] Among musculoskeletal disorders, chronic LBP (CLBP) is one of the most prevalent types. It has persisted for more than 3 months without having a known cause.[2] The population as a whole is affected by LBP, which is seen as a public health issue of clinical, social, and economic relevance that necessitates proper therapy.[3] Chronic pain should be given more consideration as a global health issue.[4]

Cross-sectional studies show that 15%–45% of Americans suffer from LBP. Similar data are available from Western nations. When LBP accounted for roughly 12.5% of all sick days in the United Kingdom in 1988–1989, it was considered the most common cause of working-related absence.[5]

The World Health Organization Quality of Life Group (WHOQOL Group) defines the quality of life as an individual's sense of their place in life in relation to expectations, patterns, and concerns within the context of the culture and value system they inhabit.[6]

Pain is the most pervasive symptom reported in the community and primary care setting and accounts for

Access this article online

Quick Response Code:

Website: https://journals.lww.com/mjby

DOI: 10.4103/MJBL.MJBL_284_23

Address for correspondence: Dr. Nadia Ayad Mohammed Jawad, Department of Rheumatology, Merjan Teaching Hospital, Babylon, Iraq. E-mail: nadia87777@gmail.com

Submission: 09-Mar-2023 **Accepted:** 19-Apr-2023 **Published:** 23-Dec-2024

How to cite this article: Mohammed Jawad NA, Alosami MH, Mahdi ZF. The impact of chronic low-back pain on quality of life among samples of Iraqi patients: A cross-sectional study. Med J Babylon 2024;21:937-43.

nearly 20% of all ambulatory visits in the United States. Pain costs an estimated $100 billion each year in health care and lost productivity.[7]

One of the most prevalent mental health issues in the general medical setting is depression, which 10%–15% of patients have. Depression causes significant impairments in health-related quality of life and disability, frequently worse than the impairment experienced by individuals with long-term medical conditions such as heart disease, diabetes, arthritis, and LBP.[7]

Studies on humans and animals clearly demonstrate the reciprocal relationship between pain (acute and chronic) and sleep quality: poor sleep can exacerbate pain, which in turn may exacerbate pain. It is not unexpected that sleep disturbances and persistent LBP might coexist since both are common health issues.[8]

The aim of this study was to examine the relationship between sociodemographic characteristics and pain severity and quality of life in CLBP patients from Iraq.

Materials and Methods

The study had been conducted from (September 1, 2020 to January 1, 2021). The Rheumatology Unit of Baghdad Teaching Hospital/Medical City was the site of this investigation.

A data collection sheet with a questionnaire was used to gather the data. The survey was divided into three parts.

Sector A

Emphasized sociodemographic data, which included age, gender, marital status (single, married, divorced, widow), educational attainment (illiterate, primary, secondary, college, higher education), smoking habits (smoker, nonsmoker, passive, ex-smoker), and employment (worked, not worked, retired, housewife, and student).

Among the anthropometric measurements were

1. Height was measured in cm while the subject was standing with their shoes off and leaning against a wall.
2. Heavy clothing and shoes were taken off, and weight was calculated in kilograms (kg). By dividing a person's weight in kilograms by their height in square meters (m^2), the body mass index (BMI) was determined. Four categories were created based on the subjects' BMI[9]:

    1. Underweight: less than 18.5 kg/m^2.
    2. A healthy weight of 18.5–24.9 kg/m^2.
    3. Being overweight 25–29.9 kg/m^2.
    4. Obese: 30.0 kg/m^2 or more.

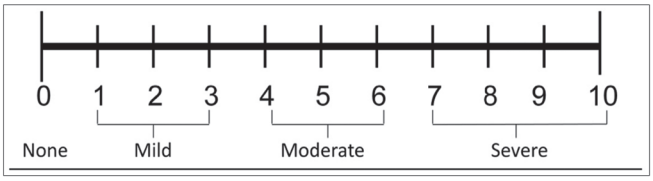
Sector B: SF-36

It was proposed to gauge physical and mental health based on eight scale scores, which were weighted sums of questions in their sectors. In order to convert each scale into a (0–100) scale, it is assumed that each question has an equal weight. A score of 100 is equal to having no handicap, while a score of 0 is equivalent to having the highest level of disability.

SF-36 eight concepts are[10] general health perception, bodily pain, social functioning, physical functioning, mental health, vitality, role limitations due to emotional problems, and role limitations due to physical difficulties.

Sector C: The rating scale of the numeric pain

The 11-point NRS is a scale from 0 to 10, with 0 representing "no pain and 10 representing "maximum discomfort."[11] As seen in the graphic below, the participant was asked to choose one number between 0 and 10 that best described their level of pain (the pain intensity was assessed over the previous 1 month).



(The pain intensity was assessed over previous one month)

Ethical approval

Approved and official permission to the study protocol were obtained from the Ministry of Higher Education and Scientific Research, College of Medicine, Rheumatology, and Medical Rehabilitation Unite, University of Baghdad, Pursuant to University Order No. (802) dated July 21, 2021. Informed verbal consent was taken from all participants; data were kept confidential and secure. The questionnaire form was taken directly by asking participants, and the data were collected without names.

Results

Table 1 shows the mean age of the participants was 45.5411.36 and the mean Body Mass Index (BMI) was 28.61 4.31 kg/m2 which overweight category based on the WHO BMI categorization. The average was 5.46 1.48 with the maximum score recorded being 9 out of 10.

Table 2 shows the correlation between pain score and SF-36 total Score, there was a significant negative correlation between them with *P* value of (0.01) and a Pearson correlation value of -0.25.

Table 1: Sociodemographic factors and pain score

	Minimum	Maximum	Mean	SD
Age (years)	17	58	45.54	11.36
BMI (kg/m^2)	19.5	40.40	28.61	4.31
Pain score	2.0	9.0	5.46	1.48

SD = standard deviation, BMI = body mass index

Table 3 shows the correlation between pain score and SF-36 physical domain scores, there was no significant correlation between them with *P* value of (0.08) and a Pearson correlation value of -0.17.

Table 4 shows the correlation between pain score and SF-36 mental domain scores, there was a significant negative correlation between them with *P* value of (0.009) and a Pearson correlation value of -0.25 which is a weak correlation.

Table 5 shows the association between socio-demographic factors and SF-36 total score. There was a significant association between marital status, occupation, and SF-36 total score, with *P* values of (0.004 and <0.001) respectively. However, there was no significant association between gender, educational level, smoking, BMI, and SF-36 total score, with *P* values of (0.448, 0.052, 0.303, and 0.0802) respectively.

Table 6 shows the association between socio-demographic factors and pain score. There was a significant association between smoking and pain score, with a *P* value of (0.016). However, there was no significant association between gender, BMI, Marital status, educational level,

Table 2: The correlation between pain score and SF-36 total score

Total score	Pain score		95% CI	
	Pearson's r	*P*-value		
	-0.25	0.01*	-0.42	-0.05

CI = confidence interval

*Pearson correlation was done, level of significance at $P < 0.05$

Table 3: The association between pain score and SF-36 physical domain

Total score	Pain score		95% CI	
	Pearson's r	*P*-value		
	-0.17	0.08*	-0.36	0.02

CI = confidence interval

*Pearson correlation was done, level of significance at $P < 0.05$

Table 4: The relationship between pain score and SF-36 mental domain

Total score	Pain score		95% CI	
	Pearson's r	*P*-value		
	-0.29	0.009*	-0.46	0.10

CI = confidence interval

*Pearson correlation was done, level of significance at $P < 0.05$

Table 5: The correlation between sociodemographic factors and SF-36 total score

Sociodemographic factors		Mean	SD	*P*-value
Gender	Male	437.15	136.75	0.448[a]
	Female	417.95	115.20	
BMI (kg/m^2)	Normal	419.05	168.96	0.802[b]
	Overweight	421.19	120.46	
	Obese	437.78	104.00	
Marital status	Divorced	493.16	0.0	0.004[b]
	Married	430.87	119.94	
	Single	516.13	104.53	
	Widowed	344.25	124.72	
Educational level	Illiterate	266.58	127.69	0.052[b]
	Primary	409.11	113.07	
	Secondary	447.76	114.54	
	College	454.80	163.74	
	Higher education	447.05	91.27	
Occupation	Housewife	424.90	107.28	<0.001[b]
	Not working	378.81	149.81	
	Retired	307.26	96.08	
	Student	679.00	0.00	
	Worker	486.21	92.83	
Smoking	No	440.07	112.85	0.303[b]
	Passive	434.86	140.77	
	Ex-smoker	370.57	112.99	
	Yes	415.66	174.19	

BMI = body mass index, SD = standard deviation

[a] An independent (*t*)test was performed

[b] One-way ANOVA was done, level of significance at $P < 0.05$

Table 6: The association between sociodemographic factors and pain score

Sociodemographic factors		Mean	SD	*P*-value
Gender	Male	5.43	1.70	0.876[a]
	Female	5.48	1.27	
BMI (kg/m^2)	Normal	5.60	1.72	0.139[b]
	Overweight	5.14	1.53	
	Obese	5.78	1.19	
Marital status	Divorced	7.0	0.0	0.392[b]
	Married	5.36	1.38	
	Single	5.80	0.78	
	Widowed	5.50	2.12	
Educational level	Illiterate	6.5	0.57	0.664[b]
	Primary	5.47	1.58	
	Secondary	5.40	1.44	
	College	5.43	1.55	
	Higher education	5.00	1.15	
Occupation	Housewife	5.48	1.22	0.307[b]
	Not working	5.38	1.92	
	Retired	4.60	2.17	
	Student	6.00	0.00	
	Worker	5.77	1.27	
Smoking	No	5.13	1.46	0.016[b]
	Passive	5.67	1.30	
	Ex-smoker	6.43	1.55	
	Yes	5.83	1.11	

BMI = body mass index, SD = standard deviation

[a] An independent (*t*) test was performed

[b] One-way ANOVA was done, level of significance at $P < 0.05$

Table 7: Sociodemographic characteristics of the participants

Variables	*N*	%
Gender		
Male	46	46.0
Female	54	54.0
Educational level		
Illiterate	4	4.0
Primary	38	38.0
Secondary	40	40.0
College	14	14.0
Higher education	4	4.0
Occupation		
Not working	16	16.0
Retired	10	10.0
Working	26	26.0
Housewife	46	46.0
Student	2	2.0
Smoking		
Not smoker	62	62.0
Ex-smoker	14	14.0
Smoker	12	12.0
Passive smoker	12	12.0
Marital status		
Single	10	10.0
Married	72	72.0
Widow	16	16.0
Divorced	2	2.0

N = mean, % = percentage

Table 8: Correlation between SF-36 and age

	SF-36 total scores	
	Pearson's *r*	*P* value
Age (years)	-0.253	0.01*

SF = short form

*Pearson correlation was done, level of significance at $P < 0.05$

occupation, and pain score, with *P* values of (0.876, 0.139, 0.392,0.664 , and 0.307) respectively.

Table 7 shows the socio-demographic characteristics of the participants. The majority of participants were female (54.0%), and the major educational level was a secondary school degree (40.0%). A total of 46% were housewives, followed by working, 26.0%. Two-thirds of the participants were not smokers (62.0%). Regarding marital status, the majority (72.0%) were married, followed by widows (16.0%).

Table 8 shows the correlation between Sf-36 total scores and age; there was a significant negative correlation between age and SF-36 total scores, with *P* value of (0.01) and a Pearson correlation value of -0.253 which indicates a weak correlation.

Table 9 shows the correlation between pain score and age; there was no significant correlation between them, with *P* value of (0.06).

Table 9: The correlation between pain score and age

	Pain score	
	Pearson's r	*P* value
Age (years)	-0.18	0.06*

*Pearson correlation was done, level of significance at $P < 0.05$

Discussion

Adults frequently experience musculoskeletal conditions. LBP is a widespread health issue around the world.[12] According to estimates, one in five persons worldwide have chronic or recurrent pain, and one in 10 adults receives a new diagnosis of chronic pain each year.[13]

In total, 100 volunteers with persistent LBP, mean age 45.54 ± 11.36, range of 17–58 years, are included in the current study (explained in Table 1). Measuring the significance of the relation between the numerical pain score and SF-36 in the assessment of chronic low backache was done in this study; the results were statistically significant. As when the pain intensity score increased, mental and global SF-36 scores decreased, but there was no correlation between pain and physical score (explained in Tables 2-4). This study[14] disagrees with the current study that showed a moderate relation between physical function and pain score. As the pain severity increased, physical function declined; this may be related to the difference in sociodemographic characteristics in the two studies.

Regarding gender, there were insignificant differences regarding gender in relative to pain or disability score (explained in Tables 5 and 6). This study, conducted by Cvijetic *et al.*,[15] supported the current gender distribution findings that there was no gender difference in self-reported back pain impairment as determined by the Roland–Morris questionnaire. The findings of Schaller *et al.*[16] concurred with this finding that there was no discernible difference between males and females. The results[17] conducted in Bosnia and Herzegovina showed the females had high pain and disability scores. This may be due to childbirth, gynecological problems, and the stress of hormonal changes. In the present study, there was an insignificant difference in number between males and females (described in Table 7); this may explain no relationship between gender and pain score or total SF-36 score.

The total SF-36 score was shown to decline with age in the current study, and there was a significant link between age and the total SF-36 score (*P*-value = 0.01 in Table 8). This outcome was consistent with previous studies by Williams *et al.*,[18] Kortor *et al.*[19] Mohamed *et al.*,[20] and Mahrous *et al.*,[21] which found that the degree of disability increased with age. Moreover, there was no link between age and pain score in this study (*P*-value = 0.06 in Table 9). This is consistent with the findings of a study by Wettstein *et al*.[22], which indicated a weak and nonsignificant ($P > 0.05$) correlation between age and pain intensity. In contrast, a research by Weiner *et al*.[23] found that people aged 70–79 experienced more severe back pain.

This study found that smoking and SF-36 score level did not correlate significantly (*P*-value = 0.3 in Table 5). In contrast, a research by Fujii *et al.*[24] found a link between smoking and persistent, incapacitating LBP. The number of smokers in this study was higher than nonsmokers number while in the current study, the nonsmokers were about two-thirds of the participants; this may explain the difference in the results. Yet, there was a significant connection (*P*-value) between the pain score and smoking (*P*-value = 0.016 in Table 6). Smokers have high pain scores, while nonsmokers have low pain scores. This was in line with a study by Williams *et al.*[18] that found a statistically significant correlation between current smoking and more severe back pain.

There were no statistically significant differences in pain scores reported according to the patients' employment status ($P > 0.05$ in Table 6).

Similar findings were observed in a study conducted in sub-Saharan Africa by Doualla *et al.*[25] However, there was a significant association between occupation and global SF-36 score (explained in Table 5), as student had high total SF-36 score, followed by worked, not worked, and retired had low global SF-36 score. Similar findings were reported by Hurwitz *et al*.,[26] who found that persistent back disabilities were more common among the unemployed. This is a result of the psychosocial strains that come with being unemployed; however, this was in contrast to a study by Kortor *et al.*[19] that found no connection between employment status and degree of disability.

Regarding educational level, this study finds no significant relationship between education level and chronic back pain disability and pain ratings (explained in Tables 5 and 6). This is in contrast to the findings of Hurwitz *et al.*,[26] who found that non-high school graduates had a higher level of impairment. But according to a study by Kortor *et al.*,[19] patients with postsecondary education had worse outcomes than those with primary and secondary education.

Regarding marital status correlation with global SF-36 score, in the current study, widowed participants show low score, while unmarried have high score (explained in Table 5). Widowed patients showed low score for quality of life may be due to the high demand of the burden of household activities without supportive assistance from their spouses.[19] The current study was supported by a study by Doualla *et al.*[25] and Hurwitz *et al.*[26] that found that the disability was much higher in widows than in married people. However, the present study did not identify a statistically significant relationship between pain score and marital status (explained in Table 6).

About the correlation of BMI with chronic back pain intensity and total SF-36 scores, this study showed no significant correlation between them (explained in Tables 5 and 6).

Leboeuf-Yde[27] studied the relationships of BMI with LBP intensity but did not discover a strong relationship between low backache and BMI, and this agreed with the current study. This is contrary to a study's findings by Hurwitz *et al.*[26], which indicated that participants with high BMI were disproportionately more likely to have a persistent back impairment. This finding may be explained by how obesity affects chronic LBP, which leads to an overload of the lumbosacral spine's articular components. High BMIs are associated with higher injury risk and energy expenditure.[28] Many chronic disorders, including disk degeneration, have been linked to obesity.[29] The difference between this study and the current study is due to the difference in the study sample and sociodemographic characteristics.

Conclusion

1. The participants' quality of life is significantly impacted by CLBP across a range of life domains, from relatively simple self-care tasks to sophisticated social interactions.
2. The overall level of quality of life, as well as the mental domain, are both greatly impacted by this CLBP disease.
3. A variety of sociodemographic characteristics have an impact on the quality of life in people with chronic LBP. Substantial correlations between the quality of life score and age, place of residence, and marital status have been discovered.
4. Smoking and the severity of chronic LBP were related.

Acknowledgments

The author thanks the medical staff of the Rheumatology and Medical Rehabilitation Unit in Baghdad Teaching Hospital for their support.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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