

Self-efficacy, pain intensity, and quality of life in individuals with chronic pain

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Received: 04/05/2014.

Accepted: 04/16/2015.

Published: 03/31/2016.

Suggested citation:

Silva MS, Hortense P, Napoleão AA, Stefane T. Self-efficacy, pain intensity, and quality of life in individuals with chronic pain. Rev. Eletr. Enf. [Internet]. 2016 [cited __/__/__];18:e1145. Available from: <http://dx.doi.org/10.5216/ree.v18.29308>.

ABSTRACT

The study aimed to correlate self-efficacy, quality of life, and pain intensity in people with chronic disease. A cross-sectional study. The sample had 95 people with chronic pain, recruited in the broadening area of a Family Health Unit. The instruments used in the study were: the Self-Efficacy Scale for Pain, the Numerical Scale of Pain, and the WHOQOL – Bref, to assess self-efficacy, pain intensity and quality of life. The correlations indicated that individuals with chronic pain and high levels of self-efficacy might present lower pain intensity and better quality of life. Self-efficacy and quality of life are variables to consider in the assessment of people with chronic pain.

Descriptors: Pain; Pain Measurement; Self Efficacy; Quality of Life; Nursing Care.

INTRODUCTION

Persistent chronic pain causes daily challenges in people's lives, such as change of roles in the family and society, responsibilities and coping with the negative emotional consequences, resulting in decrease of quality of life. However, there are evidence that behavioral cognitive factors such as self-efficacy beliefs, catastrophizing, fear, avoidance and, acceptance are variables that influence coping with pain⁽¹⁾. This could explain individual differences observed in coping with pain, along genetic, physiological, cultural, spiritual and emotional factors.

Self-efficacy beliefs can interfere in the pain experience, thus, they are highlighted as beliefs to consider in the assessment of people with chronic pain, once this construct have been pointed as fundamental for its management⁽²⁻³⁾.

Self-efficacy beliefs refer to personal abilities to successfully perform certain tasks or, to present behaviors to produce a desirable result. The term "beliefs" is defined as ideas that we consider true; they are

our actions about all aspects of life, about ourselves, about perceptions, thoughts and even environmental factors⁽⁴⁾.

In this sense, beliefs, attitudes, values and behaviors related to pain are culturally acquired and can be modified, for this reason, it is possible to use psych sociocultural concepts to manage people with chronic pain⁽¹⁻⁴⁾.

People with high self-efficacy level believe to be capable to deal with many situations in life, to win obstacles, to search for challenges and to keep a high confidence level in one's capacity to obtain success and to control one's own life. In situations when self-efficacy is low, the inverse can be perceived, allowing low capacity to resolve problems⁽⁴⁾. The analysis of beliefs in self-efficacy allows the professional to assess the situation and the available resources to decide which actions should be chosen.

There is evidence that interventions to increase self-efficacy cause improvements in the quality of life of people with chronic pain; this improvement have been reported in physical and psychological domains of quality of life⁽⁵⁻⁶⁾.

The quality of life is a variable to be taken into consideration in the assessment of the person with pain and in the applied therapeutic proposal. Quality of life is defined by the World Health Organization as the perception of the individual about his position in life, of his cultural context and of systems and values in which he lives in relation to his objectives, expectations, patterns and worries⁽⁷⁾.

In a research with Brazilians and Australians, it was observed that high beliefs of self-efficacy was a factor to decrease incapacities in people with chronic disease⁽⁸⁾. In another study conducted in the south and southeast region of Brazil, it was observed low levels of self-efficacy beliefs being related to higher incapacity and more pain intensity, demonstrating that negative self-efficacy beliefs seem to be an important predictor of incapacity. Based on this perspective, it can be expected that individuals with chronic pain presenting low self-efficacy have higher chances to have less effective coping strategies, which could cause physical incapacity and efforts to keep them employed or working regardless of the pain⁽²⁾.

A literature review⁽⁵⁾ pointed teaching of skills to manage the daily life with pain as an effective intervention for its management. Such interventions should be initiated for people who accept the nature of the chronic pain and who are available to self-manage their own pain. To teach pain self-management, group dynamic strategies, individual talks, online interventions using the internet, within other strategies can be used.

Self-efficacy emerges as an important variable to explain the pain experience of people with fibromyalgia, constituting a variable to assess when assisting the person with pain⁽⁹⁾.

Self-efficacy and quality of life are subjective variables to consider in the assessment of people with chronic pain. Thus, to know and to associate variables as pain, self-efficacy and quality of life is important for research and for attention in different care settings. Thus, this study aimed to correlate self-efficacy, quality of life, and pain intensity in people with chronic disease.

METHODS

A cross-sectional study, conducted in a coverage area of a Family Health Unit, in a city in the interior of the southeast region of Brazil.

The Family Health Unit had 2,760 people enrolled when the study was conducted. The analysis of medical records of all enrolled patients constituted the convenience sample. The inclusion criteria were: to have the diagnosis of chronic disease that resulted in chronic pain on the medical record, to be 18 years or older, to report chronic pain for more than three months⁽¹⁰⁾ and, to verbalize physical and emotional disposition to answer the questions. The exclusion criteria was the lack of success when trying to contact the participant at home for at least two times.

The present study was submitted and approved by the Ethics in Research Committee from Universidade Federal de São Carlos (UFSCar) (Protocol nº 495/2010). All participants signed the Free and Informed Consent Term approved by the Committee.

The individuals were asked to participate in the study during a scheduled home visit or when present at the Family Health Unit. The researcher himself conducted the data collection at the participant's home or at the health unit, as agreed by the participant. The data collection period was July to September of 2010.

To meet the objectives, we used an instrument to characterize participants regarding sociodemographic data (gender, age, skin color, education, family income and Body Mass Index in accordance with the World Health Organization⁽¹¹⁾), and aspects related to pain (pain location, medical diagnosis for the cause of the painful condition and diagnostic time. These two last information were extracted from their medical records), the Self-Efficacy for Pain Scale, the numeric scale for pain assessment and, the WHOQOL – Bref.

The pain intensity was assessed through a numeric scale for pain of 11 points (0 to 10), and the subject pointed the pain level considering zero (0) as absence of pain, 10 as unbearable pain and intermediate levels reflected intermediate levels of pain⁽¹²⁾.

To assess self-efficacy beliefs for chronic pain, the Self-Efficacy for Pain Scale, developed in 1995⁽¹³⁾ and validated in Portuguese in 2005⁽¹⁴⁾. The scale comprehends 22 questions classified in three domains, being those: self-efficacy for pain control (it addresses how the patient controls physical symptoms, as fatigue and pain), self-efficacy for functionality (addresses performance of some daily activities) and the self-efficacy to deal with other symptoms (addresses how pain affects the individual). In each domain, it is possible to obtain a maximum of 100 and minimum of 10 points. The maximum score obtained in this scale is of 300 and minimum of 30, the higher the scoring, the higher is the self-efficacy.

To assess the quality of life, we used a short version of the WHOQOL-100, an instrument built by the World Health Organization and validated in Portuguese⁽¹⁵⁾, the WHOQOL-bref. The WHOQOL-bref has 26 questions covering a general domain and four specific ones: physical, psychological, social relationships and environmental. We use categories to obtain answers; each question has a scale with answers, varying from one to five. The quality of life scores for each domain and for the general assessment varies from zero to 100, and the higher the value, the better is the level of quality of life⁽¹⁵⁾.

For data analysis and characterization, we used descriptive statistics with measures of central tendency (mean, minimum, and maximum) and measure of dispersion (standard deviation), besides the simple frequency and percentage calculations.

We analyzed the quality of life investigated by the WHOQOL – Bref through an analysis proposed by the WHOQOL group, available on the website <http://www.ufrgs.br/psiquiatria/psiq/whoqol86.html>.

We conducted the formal Shapiro-Wilk test with 95% of confidence, to verify the assumption of normality in the data, and the result from the P-value was lower than 0.05. Thus, we used a non-parametric technique of Spearman's correlation to analyze correlations between variables. The Spearman's ρ coefficient measures the intensity of the relationship between ordinal variables; we adopted a level of significance of 0.05⁽¹⁶⁾.

RESULTS

One-hundred and twenty people selected by medical records composed the sample, however, accounting for exclusions and losses, 95 people with chronic pain participated in the study.

Most of participants were women. The mean age was 55 years (SD=11.4), varying from 29 to 91 years. The most prevalent age group was among people under 60 years. A large part of the sample identified themselves as white, with predominance of incomplete middle school. Overweight and obesity was largely prevalent in this sample (Table 1).

Regarding the pain location, it is highlighted that most participants in the study presented chronic pain in more than one body part (71.60%), being the most prevalent were lumbar pain (32.50%), pain on lower limbs (29.0%), upper limbs (23.50%), cervical region (8.00%), and thoracic region (5.50%) and on the head (1.50%)

The main causes for chronic pain were arthrosis (40.20%), osteophytes (15.60%), disc hernia (11.40%), scoliosis/lordosis (9.90%), fibromyalgia (9.00%) and, arthritis (4.00%).

The mean score for perceived pain intensity was 6.90 points. The total mean score for chronic pain self-efficacy was 185.57 points, and the higher score was among functionality domains from the Self-efficacy Scale. The domain pain control was the most affected. The total mean score for quality of life was 56.31 points. The domain with fewer score, which is, causing the higher impact on quality of life in this sample was the psychological domain with a mean of 61.64 points (Table 2).

The correlations between self-efficacy domains and pain intensity presented weak to moderate negative correlations ($p < 0.05$). The correlations between quality of life domains and pain intensity presented weak to moderate negative correlations ($p < 0.05$). The correlations between self-efficacy domains and quality of life domains presented weak to moderate positive correlations, being the stronger correlations between physical and psychological domains of quality of life and self-efficacy domains; suggesting that better self-efficacy levels result in better levels of quality of life, especially in physical and psychological domains ($p < 0.05$) (Table 3).

Table 1: Frequency of individuals with chronic pain in a Family Health Unit, according to sociodemographic variables and BMI. São Carlos, SP, Brazil, 2010.

Variables		N (%)
Gender	Female	76 (80%)
	Male	19 (20%)
Age	< 60 years	64 (67.37%)
	>60 years	31 (32.63%)
Skin color	White	79 (83.16%)
	Black	05 (5.26%)
	Brown/mixed	10 (10.53%)
	Yellow	01 (1.05%)
Education	Illiterate	01 (1.05%)
	Incomplete middle school	46 (48.42%)
	Complete middle school	16 (16.84%)
	Incomplete high school	02 (2.11%)
	Complete high school	22 (23.16%)
	Incomplete college degree	01 (1.05%)
	Complete college degree	07 (7.37%)
Family income (minimum wage)*	Up to 2	30 (31.58%)
	2 to 4	42 (44.21%)
	>4	23 (24.21%)
BMI**	Low weight (<18.5)	02 (2.11%)
	Normal weight (18.6 a 24.9)	33 (34.73%)
	Overweight (25 a 29.9)	31 (32.63%)
	Obesity (>30)	29 (30.53%)

* Minimum wage - Brazil, 2010 (MW): R\$ 560,00

** Body Mass Index – BMI. The World Health Organization classification was used⁽¹¹⁾.

Table 2: Obtained scores from a sample of individuals with chronic pain according to pain intensity, domains from the Self-efficacy for Chronic Pain Scale, and the domains of the quality of life scale - WHOQOL-bref. São Carlos, SP, Brazil, 2010.

Variables	Mean	Min.	Max.	Standard Deviation	
Pain intensity	6.90	2	10	2.23	
Self-Efficacy	Pain control	50.28	10	100	22.29
	Functionality	73.84	10	100	25.25
	Dealing with other symptoms	61.33	11.25	100	21.82
	Total	185.47	48.25	294.40	58.21
	Physical domain	63.63	17.85	100	17.88
Quality of life	Psychological domain	61.64	16.66	100	19.93
	Social relations domain	67.01	16.66	100	18.31
	Environmental domain	66.08	31.25	100	15.28
	General	56.31	0	100	23.34

Table 3: Spearman’s correlations between pain intensity, domains, and general of quality of life. São Carlos, SP, Brazil, 2010.

Variables	Intensity	Physical	Psychological	Social Relations	Environmental	General
Intensity	1	-0.35	-0.27	-0.22	-0.32	-0.26
Pain control	-0.13	0.53	0.38	0.26	0.27	0.39
Functionality	-0.33	0.56	0.31	0.12	0.27	0.33
Dealing with other symptoms	-0.32	0.64	0.55	0.26	0.49	0.53
General	-0.32	0.69	0.49	0.28	0.39	0.48

Thus, the results point that individuals with chronic pain and with elevated levels of self-efficacy can

present lower pain intensity and better quality of life, especially in physical and psychological domains, and still, low levels of self-efficacy decrease quality of life.

DISCUSSION

We found in the present study that individuals with chronic pain presenting high levels of self-efficacy are able to control better pain symptoms. In addition, correlations between self-efficacy and quality of life domains were all positive. Such results were found in other studies^(2,8,17-18).

In the relationship analysis between self-efficacy and quality of life variables and, pain intensity, the functionality domain from the Self-efficacy Scale and the physical domain from the WHOQOL-bref were the ones presenting higher levels of negative correlations with pain intensity, demonstrating how much pain intensity affects the physical dimension of the patient, many times impeding the conduct daily activities. It is important to note that in the Self-efficacy Scale, functionality domains refers to beliefs that people have to be able to perform daily and functional activities.

The self-efficacy belief is associated with incapacity⁽²⁾. In another cross-sectional study, it was found self-efficacy associated with quality of life, being the quality of life associated with high levels of self-efficacy of individuals affected by chronic pain⁽¹⁷⁾. In addition, people with chronic pain presenting high levels of self-efficacy and satisfactory quality of life are more influenced to successfully perform a pain treatment, being it a medication one, or of changes in lifestyle⁽¹⁷⁾.

Results from a Spanish study conducted in individuals with fibromyalgia⁽⁹⁾ pointed the large therapeutic potentiality of self-efficacy. In this study, authors still signalized that to insert self-efficacy assessment would not only produce benefits in different care settings, but also to favor a less catastrophism processing of the painful information, having positive effects for the global impact of the disease. The negative relationship between self-efficacy and catastrophism was also seen, and people who self-perceive as self-efficient for pain management, process the painful situation in a less catastrophic way⁽⁹⁾.

The assessment of self-efficacy beliefs can be used as a way to guide conducts of health professionals for pain management and, if needed, to develop or strengthen such beliefs. Besides, it can be used as a tool to assess results after the conduct taken to manage chronic pain⁽²⁾. The quality of life assessment for chronic pain management also becomes of extreme importance, because, when assessing the quality of life domains (physical, emotional, social and, environmental), it is possible to direct the management focus to the aspect of more compromise⁽¹⁷⁻¹⁸⁾.

A study⁽¹⁹⁾ pointed incapacity being influenced by self-efficacy beliefs, indicating that individuals with low levels of self-efficacy does not involve themselves effectively in the treatment, and they tend to have more passive attitudes and easily give up on their objectives on the presence of obstacles. On the other hand, individuals with high self-efficacy have better adherence to treatment, they tend to be more persistent, and in general, they keep most of their activities, regardless of the pain.

Authors of a longitudinal study concluded that self-efficacy is a more important variable than fear of

movement, to mediate the relationship between pain and incapacity in people with chronic lumbar pain⁽²⁰⁾.

The assessment of self-efficacy beliefs can be used as a way to guide conducts and, if needed, to determine and incentivize self-confidence in patients to conduct normal activities. Besides, it can be used as a tool to assess results after the chronic pain management⁽¹⁸⁻²²⁾. The quality of life assessment to manage chronic pain is also of extreme importance, because when assessing the quality of life domains (physical, emotional, social and environmental), it is possible to direct the management focus to the aspect of most compromise⁽¹⁷⁾.

An adequate assessment of someone with chronic pain includes knowing the person's potentialities and weaknesses. To identify people with low levels of self-efficacy and to intervene in the strengthening of these beliefs can be a very effective strategy to improve results of chronic pain management. The use of interventions to propitiate pain self-management can be a nursing strategy to improve self-efficacy at the measure that it empowers individuals and give them strength to manage symptoms.

It is important to highlight the limitations of the present study, which are: the sample number was chosen by convenience, and the participants included in the sample were those who had a medical record in the studied Family Health Unity, and who had a medical diagnose of a disease that caused chronic pain.

CONCLUSION

The results allow concluding that individuals with chronic pain and high levels of self-efficacy can present lower intensity of pain and better quality of life, and still, low levels of self-efficacy decreases quality of life. This study proposes nursing assessment of the person with chronic pain including the self-efficacy and quality of life assessments, to direct the assistance planning, considering that knowing the potentialities and weaknesses of the individual allows thinking on the use of strategies to develop/strengthen self-efficacy.

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