

**Level of disability and quality of life in women with chronic low back pain**  
**Nível de incapacidade e qualidade de vida em mulheres com dor lombar crônica**  
**Nível de incapacidad y calidad de vida en mujeres con dolor lumbar crónico**

Received: 01/12/2019  
Approved: 13/04/2019  
Published: 15/05/2020

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Study with a quantitative and cross-sectional design, with the objective of comparing the level of disability and quality of life of women diagnosed with nonspecific low back pain and volunteers without low back pain. 24 women participated, divided into two groups, one with 13 volunteers diagnosed with nonspecific low back pain (G1) and the second with 11, without low back pain (G2). They were recruited at the orthopedics and traumatology service of the Maria da Glória outpatient clinic of the Universidade Federal do Triângulo Mineiro. Data was collected using the questionnaires: *Whoqol-Bref*, the Oswestry Disability Index, and the Visual Analog Scale of pain. The mean age for the group with pain was  $37.69 \pm 11.83$  years and for the group without pain,  $36.91 \pm 12.12$ , with no significant difference between the groups. Women with nonspecific low back pain had an average of  $5.61 \pm 1.85$  points for pain perception (moderate intensity), a mean score on the Oswestry Disability Index of 25 (moderate disability), and overall average quality of life, at  $69.8 \pm 7.11$  points. The most compromised domain was the physical, followed by the environmental. There was a significant difference, with greater impairment in the general quality of life and in physical domain, for women in pain, in addition to a significantly greater disability.

**Descriptors:** Pain; Low back pain; Quality of life; Exercise.

Estudo com abordagem quantitativa e transversal, com o objetivo de comparar a incapacidade e a qualidade de vida de mulheres com diagnóstico de dor lombar inespecífica às de voluntárias sem dor lombar. Participaram 24 mulheres, divididas em dois grupos, sendo o primeiro com 13 voluntárias com diagnóstico de dor lombar inespecífica (G1) e o segundo com 11 voluntárias sem dor lombar (G2), recrutadas no serviço de ortopedia e traumatologia do ambulatório Maria da Glória da Universidade Federal do Triângulo Mineiro. Foram aplicados os questionários: *Whoqol-Bref*, Índice de Incapacidade de Oswestry e a Escala Visual Analógica de Dor. A média de idade para o grupo com dor foi de  $37,69 \pm 11,83$  e para o grupo sem dor,  $36,91 \pm 12,12$ , sem diferença significativa entre os grupos. As mulheres com dor lombar inespecífica apresentaram média de  $5,61 \pm 1,85$  para a percepção da dor (intensidade moderada), média de pontuação obtida no Índice de Incapacidade de Oswestry de 25 (incapacidade moderada) e média geral da qualidade de vida de  $69,8 \pm 7,11$  pontos, sendo os domínios mais comprometidos o físico, seguido pelo meio ambiente. Houve diferença significativa, com maior comprometimento na qualidade de vida geral e domínio físico para as mulheres com dor, além de incapacidade significativamente maior.

**Descritores:** Dor; Dor lombar; Qualidade de vida; Exercício.

Estudio con abordaje cuantitativo y transversal, con el objetivo de comparar la incapacidad y la calidad de vida de mujeres con diagnóstico de dolor lumbar inespecífico a las voluntarias sin dolor lumbar. Participaron 24 mujeres, divididas en dos grupos, siendo el primero con 13 voluntarias con diagnóstico de dolor lumbar inespecífico (G1) y el segundo con 11 voluntarias sin dolor lumbar (G2), reclutadas en el servicio de ortopedia y traumatología del ambulatorio Maria da Glória de la Universidad Federal do Triângulo Mineiro. Fueron aplicados los cuestionarios: *Whoqol-Bref*, Índice de Incapacidad de Oswestry y la Escala Visual Analógica de Dolor. El promedio de edad para el grupo con dolor fue de  $37,69 \pm 11,83$  y para el grupo sin dolor,  $36,91 \pm 12,12$ , sin diferencia significativa entre los grupos. Las mujeres con dolor lumbar inespecífico presentaron promedio de  $5,61 \pm 1,85$  para la percepción del dolor (intensidad moderada), promedio de puntuación obtenida en el Índice de Incapacidad de Oswestry de 25 (incapacidad moderada) y promedio general de la calidad de vida de  $69,8 \pm 7,11$  puntos, siendo los dominios más comprometidos el físico, seguido por el medio ambiente. Hubo diferencia significativa, con mayor comprometimiento en la calidad de vida general y dominio físico para las mujeres con dolor, además de incapacidad significativamente mayor.

**Descriptores:** Dolor; Dolor en la región lumbar; Calidad de vida; Ejercicio.

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## INTRODUCTION

The United Nations (UN), based on data until 2012, reveals that the world population is unlikely to stop growing this century. There is an 80% probability that it will grow from 7.2 billion people to between 9.6 and 12.3 billion in 2100<sup>1</sup>. At least 65-84% of the population will have an episode of low back pain (LBP) at some point in life<sup>2</sup>. These data indicate LBP as a public health problem capable of influencing functional disability and decreasing productivity<sup>3</sup>.

LBP is classified as the condition that most contributes to the increase in the years lived with global disability<sup>4</sup>. It becomes chronic when the pain lasts or is repeated for more than three months. This situation has a prevalence in females and people from 40 to 80 years old<sup>5,6</sup>. There is a gap in literature on the prevalence of LBP in Brazil, but existing researches point to a high annual rate (> 50%) in adult individuals<sup>7</sup> and a total prevalence between 4.2% and 14.7%<sup>8</sup>.

The complex dimensions of this issue point to biopsychophysiological factors, and their somatization may be related to the magnitude of the experience of pain reported<sup>9</sup>. LBP can negatively affect the individual's Quality of Life (QOL), causing sleep disorders, associated with changes in physical and mental capacity<sup>10</sup>. The physical capacity is associated with the stabilization function of the lumbar vertebrae, directly influenced by low back pain. The static and dynamic stability of the spine, under normal conditions, depends on the integration of the passive, active and neural systems<sup>11</sup>.

Due to the high incidence and prevalence of LBP, a biopsychosocial evaluation is necessary to elucidate information for the scientific settings and clinical practice<sup>12</sup>. Thus, the aim of this study was to compare the level of disability and quality of life of women diagnosed with nonspecific low back pain to those without low back pain.

## METHOD

This study has a quantitative and cross-sectional design and evaluated women with and without nonspecific low back pain, through a convenience sample. The study occurred in 2017 and 2018, and the data was collected at the Laboratory for the Analysis of Human Movement of the Universidade Federal do Triângulo Mineiro (UFTM).

The women that participated in the study were divided into two groups, the first (G1) with volunteers with a diagnosis of nonspecific LBP and the second (G2) with volunteers without low back pain. They were recruited from the orthopedics and traumatology unit of the Maria da Glória outpatient clinic at UFTM and through oral publicity of the research within the institution itself.

To be included in the study, volunteers should have a diagnosis of low back pain already being monitored clinically (G1) or have no history of spinal dysfunction (G2). They had to be between 25 and 55 years old, accept to participate in the study and sign the Free and Informed Consent Form (TCLE). This research was approved by the UFTM Human Research Ethics Committee through protocol number 2.175.790.

The data was identified by codes. The participants were instructed by a trained researcher on how to complete the questionnaires and the form with personal data. The researcher remained available for clarifications without influencing the results.

The *Whoqol-Bref* questionnaire is validated in Brazil and easy to apply. It has 26 questions on a Likert scale from 1 to 5 in which, the closer to 5, the better the result, except for questions 3, 4, and 26 (which are reversed). The instrument has 2 general QoL questions and the others are divided into the physical, psychological, social relations, and environmental domains<sup>13,14</sup>. The higher the result, the better is the perception of quality of life

The Oswestry Disability Index (ODI) is an effective method for measuring disability in patients with LBP. It has a high degree of severity and is efficient for assessing LBP resulting from different causes. It includes 10 sections with 6 questions each, addressing the intensity of

the pain and its disabling effect on typical daily activities, such as personal care, walking, sitting, getting up, sleeping, sex life, social life, and travel. The sum of the ODI scores, which range from 0 to 5 points, is expressed by the percentage of the maximum counts.

If the patient is unable to complete a section, the percentage score is adjusted. The score in all sections is added, then divided by the maximum number of points that can be obtained in all sections answered, and the final result is multiplied by 100 (percentage). Thus, the total ODI score ranges from 0 to 100<sup>15</sup>, being classified into minimal disability (0 - 20%), moderate disability (21- 40%), severe disability (41 - 60%), disabled patient (61 - 80 %), and restricted to the bed (81 - 100%)<sup>16</sup>.

The Visual Analog Scale (VAS) consists of measuring the intensity of pain in the patient, and it is an important instrument to check, more reliably, its evolution during treatment and during the care provided. It ranges from 0 to 10, with 0 being painless; 1-3, mild pain; 4-6, moderate; 7-9, severe pain; and 10, unbearable pain<sup>17</sup>.

Data were presented using descriptive statistics with mean and standard deviation for quantitative variables. The student's *t*-test was applied for comparisons between groups, considering a significance level of 5%. The analyses were performed using the IBM SPSS Statistics software, version 23.

## RESULTS

Twenty-four women participated in the study, divided into two groups, the first (G1) with 13 volunteers with a diagnosis of nonspecific LBP and the second (G2) with 11 volunteers without low back pain. Personal and other information of the groups, such as age, body mass index, *Whoqol-Bref* scores, ODI and physical activity can be seen in Table 1.

The mean age for the group of women with LBP was  $37.69 \pm 11.83$  and for the group without pain, it was  $36.91 \pm 12.12$ . There was no significant difference between groups.

Women with nonspecific LBP presented a mean of  $5.61 \pm 1.85$  for pain perception (moderate intensity), an average score obtained on the Oswestry Disability Index of 25 (moderate disability), and a general average of Quality of Life of  $69.8 \pm 7.11$  points, with the most compromised domains being the physical, followed by the environmental.

There was a significant difference, with greater impairment in the general quality of life and physical domain, for women in pain, in addition to a significantly greater disability.

**Table 1.** Results of quality of life, perception of pain, and psychosocial values. Uberaba, 2017/2018.

	G1 (N=13)	G2 (N=11)	t Test	p value
	Mean (Standard deviation)	Mean (Standard deviation)		
Age (years)	37.69 (11.83)	36.91 (12.12)	t=0.160	0.875
BMI	25.69 (2.73)	23.87 (2.18)	t=1.785	0.088
Quality of life				
Global score	69.8 (7.11)	78.75 (9.53)	t=-2.521	<b>0.019</b>
Physical Domain	64.8 (13.2)	82 (13.4)	t=-3.170	<b>0.004</b>
Psychological Domain	69 (8.8)	76.6 (11.2)	t=-1.893	0.071
Social relations Domain	78 (14)	81.2 (12.6)	t=-0.596	0.557
Environment Domain	67.4 (13.6)	75.2 (10)	t=-1.557	0.134
ODI score	25 (12.37)	4.54 (3.84)	t= 5.647	<b>&lt;0.001*</b>
	n	n		
Physical activity				0.392
Yes	6	7		
No	7	4		

## DISCUSSION

The most compromised domain for women with nonspecific LBP was the physical, followed by the environmental. Other studies also identified an impairment in the physical domain<sup>18-21</sup>. This domain is composed of questions related to pain, discomfort, energy, fatigue, sleep, and rest. Thus, it can be perceived how much these factors are negatively affected in individuals with low back pain.

Although all domains of the QoL of these women presented slightly worse results, compared to those without low back pain (G2), there was a difference between the groups only for the general score and physical domain.

As for the level of disability, other studies found a moderate result<sup>19,22</sup>. For the first group (G1) functional capacity was also significantly lower, demonstrating how much people with low back pain are prevented from normally performing daily activities.

These results are explained by the fact that LBP causes movement limitation, impairing functional performance<sup>5,24</sup>. Other studies<sup>12,24</sup> indicate an association between pain and disability. Thus, there are negative effects of symptoms from chronic diseases on QoL and on the functionality of patients with pain.

The treatment involving physical activities is beneficial for the improvement of symptoms and QoL in patients with LBP<sup>25</sup>, since it is an important action to reduce pain and disability. However, the result of the present study did not find differences between the groups regarding this variable. This can be explained due to its cross-sectional design, which prevents the analysis of the results of this practice over time.

The adoption of a practice that is beyond the clinical model is important, as this model is insufficient to explain the persistence of symptoms of pain<sup>26</sup>. Individuals with chronic illnesses have to face discomfort and disability, follow the treatment regularly, modify behaviors to minimize undesirable results, adjust their social life and work to their functional limitations, and deal with emotional consequences<sup>7</sup>.

The measurement of variables related to LBP can contribute to choosing the best treatment, monitoring the evolution of the pain and the evaluation of the result of assistance, contributing to the clinical practice especially when considering that LBP is not treated only through biomechanical interventions, and that the professional must understand how biopsychosocial aspects of the patient may be affected.

## CONCLUSION

Women with nonspecific LBP have greater disability and greater general and physical impairment of their QoL.

A limitation of the study is that other factors could influence QoL and the individual experience with pain, such as occupation, education level, other pre-existing diseases, income, and psychological factors.

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#### CONTRIBUTIONS

**Marina Andrade Donzeli, Lucimara Ferreira Magalhães, Guilherme Vitoriano Almeida de Oliveira, Anderson Alves Dias, Andréa Licre Pessina Gasparini and Dernival Bertencello** were responsible for the conception, design, analysis, and interpretation of the data, in addition to writing the article and reviewing.

#### How to cite this article (Vancouver)

Donzeli MA, Magalhães LF, Oliveira GVA, Dias AA, Gasparini ALP, Bertencello D. Level of disability and quality of life in women with chronic low back pain REFACS [Internet]. 2020 [cited in *insert day, month and year of access*]; 8(2):261-266. Available from: *insert access link*. DOI: *insert DOI link*.

#### How to cite this article (ABNT)

DONZELI, M. A.; MAGALHÃES, L. F.; OLIVEIRA, G. V. A.; DIAS, A. A.; GASPARINI, A. L. P.; BERTONCELLO D. Level of disability and quality of life in women with chronic low back pain **REFACS**, Uberaba, MG, v. 8, n. 2, p. 261-266, 2020. Available from: *insert access link*. Access in: *insert day, month and year of access* DOI: *insert DOI link*.

#### How to cite this article (APA)

Donzeli, M.A., Magalhães, L.F., Oliveira, G.V.A., Dias, A. A., Gasparini, A.L.P. & Bertencello, D. (2020). Level of disability and quality of life in women with chronic low back pain *REFACS*, 8(2), 261-266. Recovered in: *insert day, month and year of access* from *insert access link*. DOI: *insert DOI link*.