Quality of Life in Patients With Post-COVID-19 Syndrome

A Qualidade de Vida em Pacientes com Síndrome Pós-COVID-19

Calidad de Vida en Pacientes con Síndrome Post-COVID-19

RESUMO

Objetivo: avaliar a qualidade de vida de pacientes vivendo com a síndrome pós-COVID-19. **Método:** Estudo transversal que utilizou o questionário europeu de qualidade de vida EQ-5D-5L, escala de estado funcional pós COVID, escala de dispneia e escala de fadiga. **Resultados:** Participaram 111 pacientes, sendo (80,18%) do sexo feminino, ensino médio completo (45,9%), autodeclarados pardos (73%), casados/união estável (45,04%) e renda de até 1 salário mínimo (47,7%). Homens casados apresentaram maior índice de qualidade de vida. Na escala de estado funcional pós-COVID-19, foi identificado baixos níveis de qualidade de vida nos indivíduos com limitações moderadas/graves e nos graus 2 e 3 da escala de dispneia, na escala de fadiga, o aumento de pontuação reduziu o índice de qualidade de vida. Dispneia, fadiga, alterações de memória foram os sintomas mais relatados. **Conclusão:** A qualidade vida foi baixa devido fatores socio-demográficos e sequelas da doença.

DESCRITORES: Síndrome pós-COVID-19; Sinais e sintomas; Qualidade de vida; Questionário.

ABSTRACT

Objective: to evaluate the quality of life of patients living with post-COVID-19 syndrome. **Method:** Cross-sectional study that used the European quality of life questionnaire EQ-5D-5L, post-COVID functional status scale, dyspnea scale, and fatigue scale. **Results:** 111 patients participated, of which 80.18% were female, had completed high school (45.9%), self-declared brown (73%), married/stable union (45.04%), and income of up to 1 minimum wage (47.7%). The average EQ-5D-5L index was 0.610. Married men had a higher quality of life index. On the post-COVID-19 functional status scale, low levels of quality of life were identified in individuals with moderate/severe limitations and in grades 2 and 3 of the dyspnea scale; on the fatigue scale, the increase in score reduced the quality of life index. Dyspnea, fatigue, and memory changes were the most reported symptoms. **Conclusion:** Quality of life was low due to sociodemographic factors and sequelae of the disease.

DESCRIPTORS: Post-COVID-19 syndrome; Signs and symptoms; Quality of life; Questionnaire.

RESUMEN

Objetivo: evaluar la calidad de vida de los pacientes que viven con síndrome post-COVID-19. **Método:** Estudio transversal que utilizó el cuestionario europeo de calidad de vida EQ-5D-5L, escala de estado funcional post-COVID, escala de disnea y escala de fatiga. **Resultados:** Participaron 111 pacientes, de los cuales (80,18%) eran de sexo femenino, con bachillerato completo (45,9%), color de piel autodeclarado moreno (73%), casados/en unión estable (45,04%) y con ingresos de hasta 1 salario mínimo (47,7%). El índice medio EQ-5D-5L fue de 0,610. Los hombres casados tenían un índice de calidad de vida más alto. En la escala de estado funcional post COVID-19 se identificaron niveles bajos de calidad de vida en individuos con limitaciones moderadas/severas y en los grados 2 y 3 de la escala de disnea, en la escala de fatiga el aumento de puntaje redujo el índice de calidad de vida. La disnea, la fatiga y los cambios en la memoria fueron los síntomas más reportados. **Conclusión:** La calidad de vida fue baja debido a factores sociodemográficos y secuelas de la enfermedad.

DESCRIPTORES: Síndrome post-COVID-19; Signos y síntomas; Calidad de vida; Cuestionario.

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INTRODUCTION

Post-COVID-19 syndrome (PCS) is characterized by symptoms that persist or appear for the first time within three months after COVID-19 infection and cannot be explained by other reasons. [1] These are lasting signs and symptoms that can compromise physical, cognitive, mental and social health and interfere with daily life, directly impacting the quality of life of individuals. [2]

The World Health Organization (WHO) defined quality of life (QOL) as an individual's perception of their positioning in relation to their own life, in a cultural context and value system in which the individual lives, and also in relation to their goals, expectations, standards and concerns. [3] Attention to QoL related to health and aspects surrounding it is of utmost importance to understand the implications associated with post-COVID-19. [4] Therefore, the stratification of mental and physical health allows us to assess the impact of infections, showing how health conditions influence QoL. [5] Thus, this study aims to evaluate the QoL of patients with CPS and describe their sociodemographic and clinical characteristics.

METHODS

- Population and study location

Patients of both sexes who confirmed previous infection through serological testing and were registered in a multidisciplinary monitoring program for PCS offered by the Center for Tropical Medicine, an integration unit of the Federal University of Pará, in the Amazon region.

- Study design and data collection

This is a cross-sectional, analytical and descriptive study that used a standardized form to collect sociodemographic information and clinical data were obtained through an interview in a private room, from September 2022 to June 2023.

The EQ-5D-5L questionnaire was used to assess quality of life. Its use comes from the recommendations and authorization of EuroQol [6] and the calculation of EQ-5D-5L index values was performed using SPSS, from the United States (US) Pickard value set, version 1.1 (updated on 11/16/2020).

The post-COVID-19 functional status scale classifies impairment as grade 0 (zero) - no functional limitation; grade 1 - insignificant functional limitation, grade 2 - mild functional limitation, grade 3 - moderate functional limitation and grade 4 - severe functional limitation. [7]

The dyspnea scale assesses the sensation of dyspnea reported by the patient during their daily physical efforts and limits their daily activities. [8] It consists of 5 quotes with a classification from grade 0 (zero) to grade 4, where the higher the score, the greater the degree of dyspnea. [9]

The fatigue scale summarizes how the patient experiences the symptoms of physical and psychological fatigue in their daily lives. It consists of 10 statements that must be answered on a five-point scale, with "Always" being equivalent to 5 points; "Often" 4 points; "Sometimes" 3 points; "Rarely" 2 points; and "Never" 1 point. This score can range from 10 points (less fatigue) to 50 points (greater fatigue), indicating a possible decline in physical and cognitive activities. [10]

- Inclusion criteria

(i) Individuals over 18 years of age;

(ii) Residents of the metropolitan region of Belém;

(iii) Proof of previous infection through laboratory testing and at least

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4 weeks since the onset of symptoms;

(iv) Authorize participation in the study through the Free and Informed Consent Form – TCLE

- Exclusion criteria

(i) Being disoriented in time and/or space;

(ii) Presenting a learning deficit that prevents understanding of the study.

- Statistical analysis

The data were organized and processed using Microsoft Office Excel 2019 and the results were presented in tables and graphs. A descriptive analysis was performed using the IBM SPSS Statistics software version 24, adopting a significance level of 5% (p-value <0.05).

- Ethical aspects

All ethical aspects of research were respected in accordance with Resolution No. 466/2012 of the National Health Council (CNS). This study was approved by the Research Ethics Committee of the Tropical Medicine Center of the Federal University of Pará and approved under opinion number 6,847,961 (CAAE 78810424.4.0000.5172).

RESULTS

A total of 111 patients participated, with a predominance of females, mean age of 56 years, high school diploma, self-declared brown skin color, married or living in a stable union, and individual income of up to 1 minimum wage. Regarding the EQ-5D-5L questionnaire, the mean quality of life index (EQindex) was 0.610. Women had a lower quality of life index than men. Regarding marital status, married individuals had a higher index. Variables such as age group, education, race, and income were not statistically significant (Table 1).

Table 1 Sociodemographic characteristics of patients with post-COVID-19 syndrome in the Metropolitan Region of Belém. Pará, Brazil, September 2022 to June 2023 (N = 111).

Sociodemographic Variables	N	Mean	Median	Standard deviation	Minimum	Maximum	P-Value[1]
Gender							
Female	89	0,577	0,660	0,297	-0,425	1,000	0.006*
Male	22	0,764	0,817	0,218	0,004	1,000	
Age group							
28-37	9	0,583	0,535	0,233	0,26	1,000	0.974ns
38-47	16	0,637	0,729	0,323	-0,101	1,000	
48-57	35	0,595	0,678	0,269	-0,016	0,902	
58-67	34	0,618	0,714	0,325	-0,425	0,943	
68 or older	17	0,641	0,749	0,294	-0,062	1,000	
Education							
Complete higher education	38	0,650	0,701	0,258	-0,079	1,000	0.080ns
Complete high school	51	0,639	0,749	0,274	-0,016	1,000	
Incomplete elementary school	14	0,427	0,512	0,370	-0,425	0,943	
Complete high school	8	0,608	0,728	0,343	-0,101	0,940	
Raça							
Parda	81	0,596	0,678	0,301	-0,425	1,000	0.479ns
Branca	22	0,695	0,787	0,274	-0,062	1,000	
Preta	8	0,572	0,623	0,223	0,175	0,817	
Estado Civil							
União Estável	16	0,467	0,522	0,325	-0,101	0,943	0.034*
Solteira	41	0,578	0,622	0,288	-0,425	1,000	
Divorciada	12	0,574	0,676	0,377	-0,079	0,943	
Viúva	8	0,688	0,768	0,221	0,336	0,902	
Casada	34	0,723	0,787	0,226	0,186	1,000	

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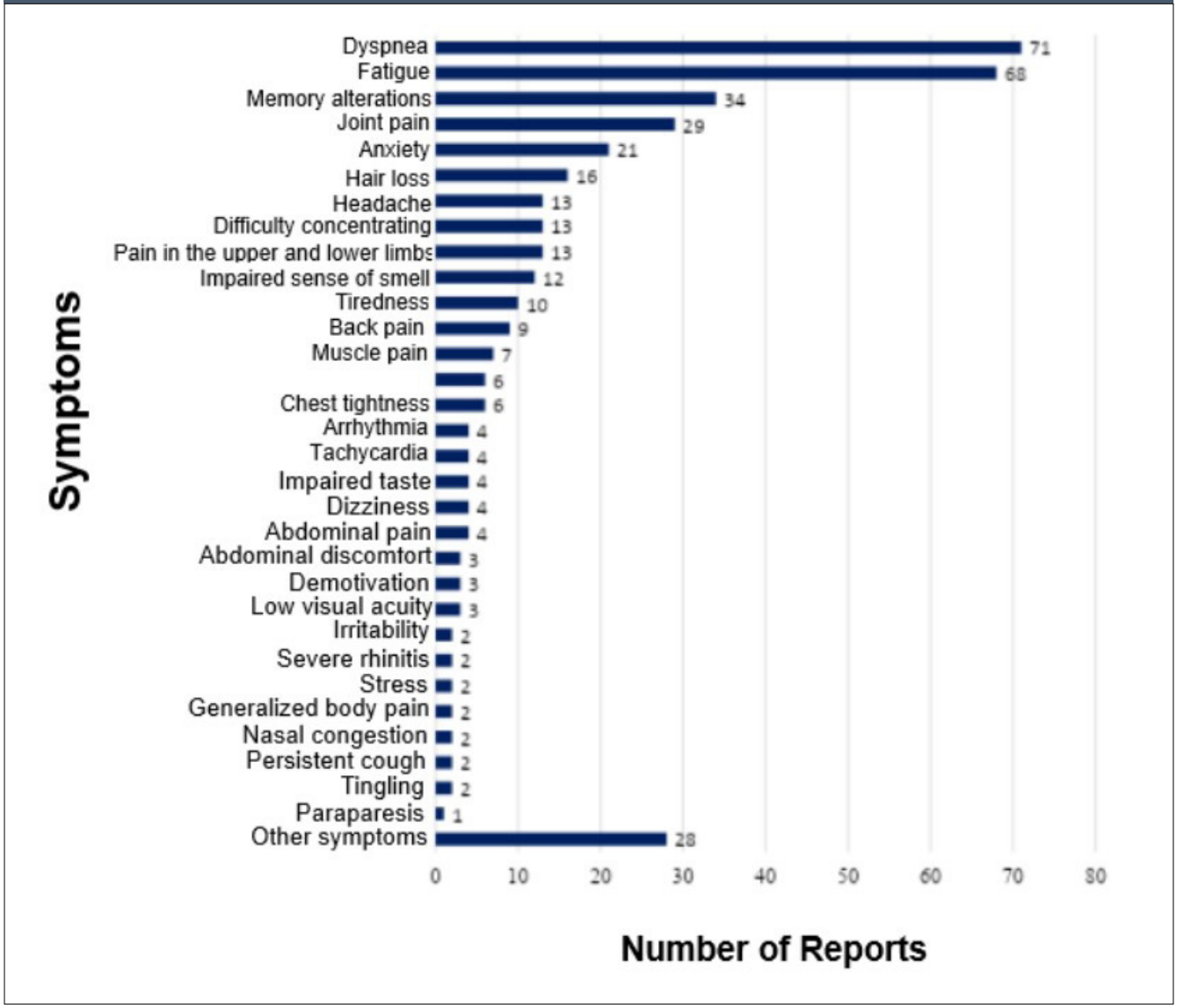
Individual income							
NI	11	0,515	0,541	0,306	-0,101	0,902	
<1 MW	17	0,449	0,502	0,363	-0,425	0,943	
1 MW	36	0,635	0,746	0,296	-0,062	1,000	
2 MW	16	0,651	0,678	0,21	0,175	0,943	
3 to 5 MW	23	0,670	0,72	0,256	-0,079	1,000	
>5 MW	8	0,771	0,831	0,202	0,344	1,000	

CHE: Complete higher education; CHS: Complete high school; IES: Incomplete elementary school; CHS: Complete high school. NI: No income; MW: Minimum wage.

SOURCE: Prepared by the author.

Sixty different symptoms were reported, of which 29 occurred only once and are exemplified in Figure 1.

Figure 1 - Classification of symptoms reported by patients affected by post-COVID-19 syndrome in the Metropolitan Region of Belém, Pará, Brazil, 2023.



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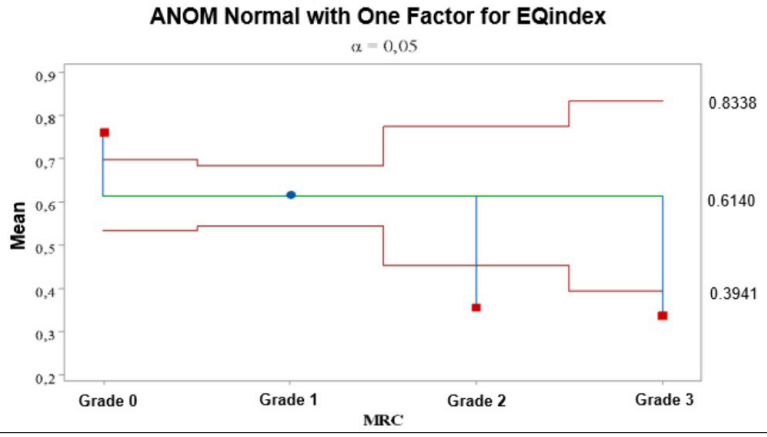
Patients with very mild post-COVID-19 functional status had a higher quality of life index in relation to the EQindex mean. And the moderate and severe groups represented the lowest indices. These relationships were significant (p<0.05).

In the evaluation of the dyspnea scale, patients with grade 0 dyspnea obtained a higher quality of life index in relation to the EQindex mean and the grade 2 and 3 groups are outside the lower decision limit of the graph, thus representing lower levels of quality of life (Figure 2).

Figure 2 Analysis of variance of the EQindex index as a function of the Dyspnea Scale (MRC) score, obtained by patients affected by post-COVID-19 syndrome, in the Metropolitan Region of Belém, Pará, Brazil, 2023.

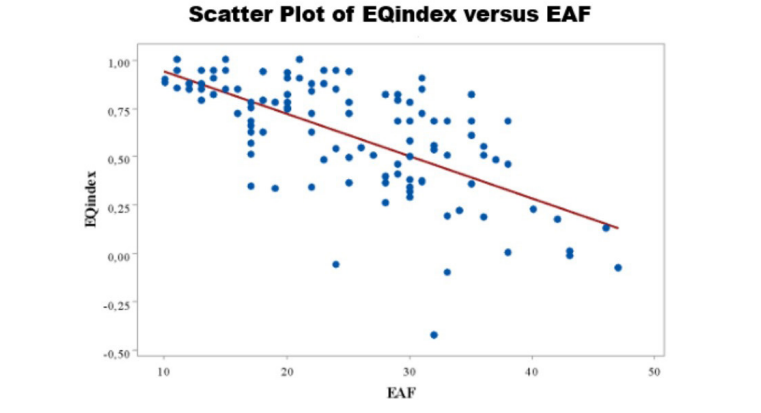


F test for analysis of variance of means (p-value <0.05).

F = 72.355 p = < .001*

In the fatigue scale assessment, the mean score was 24.96, minimum of 10, median of 24 and maximum of 47. Figure 3 represents the result obtained between the EQ-5D-5L index and the scale score. The correlation showed that the increase in the EAF score implies a significant reduction in the QoL index of patients (r = -0.658).

Figure 3 Pearson correlation between the EQindex index and the fatigue score obtained by patients affected by post-COVID-19 syndrome, in the Metropolitan Region of Belém, Pará, Brazil, 2023.



Pearson Correlation Test Result (r) = -0.658 (strong negative correlation)
p-value = 0.000*

DISCUSSION

In this study, the majority of the population were women who presented the worst levels of quality of life (QoL). Studies [1,11-12-13] worldwide corroborate that female sex is a factor associated with the risk of developing PCS, which may be due to sex hormones in the immune response [14] or by reduced alveolar diffusion or exercise tolerance that contributes to slower mental and physical recovery, which impacts daily life activities and consequently QoL. [15] Regarding marital status, married people obtained a higher QOL index, which indicates that having a partner can be beneficial in the health-disease process [16] and is a protective factor in the body's inflammatory process, consolidating QoL. [17]

The symptoms most reported by patients in this study follow the world literature as the most prevalent among populations facing CPS around the planet, bringing multisystemic impact and additional damage. [1,2,4]

On the fatigue and dyspnea scale, debilitating complaints were responsible for psychological/psychiatric disorders, in daily life and in the ability to work, significantly compromising the general state of health. [18] These are risk factors that contribute to the fixation of PCS, making recovery difficult [19] and appearing in the scoring of the evaluation scales.

On the post-COVID-19 functional status scale, individuals with moderate/severe degrees may maintain high inflammatory biomarkers, impaired muscle strength and functional capacity, dyspnea and consequently lower QoL. [20-21]

These results reveal how much PCS impacts different areas such as cognitive, emotional or motor, directly affecting the QoL, functional and work status of those affected.

CONCLUSION

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A significant worsening in quality of life was observed in these patients with PCS and our results show the need for continued care and monitoring over time. Clinical studies and treatments are opportune, as well as verification of their effectiveness to prevent health problems.

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