

Quality of Life of People With Motor Disabilities, Involved or Not in Parasports

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Abstract

Objective: The aim of the present study was to assess the influence of parasport on the quality of life of people with motor disabilities.

Methodology: This cross-sectional quantitative study was conducted with 39 para-athletes ($\bar{x} = 30.9 \pm 11.7$ years) and 10 non-athletes with motor disabilities ($\bar{x} = 31.6 \pm 9.3$ years). The study was approved by the Research Ethics Committee of the University of Pará State (CAAE nº 51930821.2.0000.5174), under protocol no. 5.012.266, of October 1, 2021. Data were collected on a Google Forms questionnaire. Quality of life was evaluated by applying the World Health Organization Quality of Life Questionnaire — WHOQOL-100. The data were presented using descriptive statistics and underwent inferential analysis via nonparametric tests, where continuous data distribution is distinguished from normal distribution. The Mann-Whitney nonparametric test was applied for intergroup comparisons of continuous variables. For discrete and/or nominal variables, Pearson's chi-squared test was used, both with a significance level of $p < 0.05$ to reject the null hypothesis.

Results: The para-athletes exhibited better quality of life than that of non-athletes ($\Delta\% = 12.97\%$, $p = 0.02$), the former achieving a general index of 14.20, classifying them as high (above 14 points). This result is due primarily to Domain 6 (Spirituality), where this group obtained an index of 16.90, higher than that of the group of non-athletes in this domain ($\Delta\% = 16.69\%$).

Conclusion: With respect to their physical disabilities, the para-athlete group displayed better quality of life than their non-athlete counterparts. It can be inferred that engaging in parasports may have helped people with physical disabilities overcome their limitations.

Introduction

The current inclusion of persons with disabilities (PWD) in Brazil occurred due to the attitudes, actions and political discourse that emerged in the 1990s. The issue involves NGOs, families and people with disabilities fighting for their rights. This has become more consolidated since the end of the 20th century, by legal means and political debate surrounding their inclusion in society. Despite all these legal victories, exercising citizenship remains difficult in Brazil and much of the world. However, advances in overcoming attitudinal, architectural and communication barriers have prompted additional measures (WILLIAMS et al., 2020).

Another aspect to consider is their greater perception of poor quality of life (QoL) (NEPOMUCENO, 2020). This is due to the limitations and restrictions that are often imposed because of their disability, which may affect the interaction between environmental factors and PWD (DIAZ et al., 2019).

The World Health Organization (WHO, 2012) defines QoL as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals,

expectations, standards and concerns. The components of QoL contribute with a wide range of assessment instruments, mainly cultural issues, which hinders a universal concept (TAYLOR, 2020).

Dantas (2021) defined QoL as a complex multideterminant concept that should be continuously interpreted, not as a dichotomy (enjoying QoL or not), resulting from the correlation between factors that model and differentiate the day-to-day of individuals, in terms of their perceptions, relationships and experiences, that is, originating in a set of individual, sociocultural and environmental parameters that characterize the human condition, a community or a nation.

The literature reports the beneficial influence of regular exercise (DAUWAN et al., 2021), and sports (PĂUNESCU et al., 2018), including paraspors (DIAZ et al., 2019) on QoL.

Physical exercise has a direct influence on the autonomy and functionality of daily activities and even the self-esteem of people with disability (SANCHEZ et al., 2021). Another positive point of physical exercise is a healthy lifestyle; however, PWD must adhere to a PE program in order to obtain the benefits.

The positive effects of physical exercise are well documented in the literature, especially for PWD. Doneedu et al. (2020) found that strength training reduces nerve lesions in patients with chronic inflammatory demyelinating polyradiculoneuropathy, due to muscle fiber hypertrophy, the anti-inflammatory effect of exercise or an increase in neural impulse.

Regular physical exercise is associated with better QoL perception by PWD. In addition to increasing functional capacity, it improves health and performance-related physical aptitude, depending on the intervention prescribed (INGRASSIA et al., 2020).

It is important to encourage PWD to engage in planned physical activities, since they provide possibilities and resources that act as facilitators in recovering and promoting personal functions, functional autonomy and self-esteem, leading to greater propensity to exhibit a positive outlook on QoL.

As such, the aim of the present study was to assess the influence of paraspors on the quality of life of persons with disabilities.

Materials And Methods

Study design: Cross-sectional quantitative study conducted between October 2021 and January 2022. This type of study allows the researcher to adopt an observational approach, collecting data for a specific period (THOMAS et al., 2015).

Sampling and sample: The sample was selected by convenience and consisted of two groups:

- 39 adult para-athletes ($= 30.9 \pm 11.7$ years) participants of the Caixa Loterica Paralympic Meeting, whose data were collected on December 4, 2021 and

- 10 adult non-athletes with motor disabilities ($= 31.6 \pm 9.3$ years), members of the Association of Persons with Motor Disabilities of Sergipe, whose data were collected between January 3 and 15, 2022.

Included in the study were young adults with motor disabilities, aged between 18 and 39 years, and mature subjects (40 to 59 years), according to the WHO classification (2017).

On the other hand, those with health complications, resulting or not from their disability, that could compromise their activities of daily living in the previous two weeks, were excluded.

Research Ethics: The present study was approved by the Research Ethics Committee of the University of the State of Pará – (CAAE nº 51930821.2.0000.5174), under protocol no. 5.012.266 of October 1, 2021, complying with the human research guidelines of National Health Council Resolution no. 466/12 of December 12, 2012 and the Declaration of Helsinki (WMA, 2013).

Results

The quality of life of the sample was assessed using the World Health Organization Quality of Life - WHOQOL-100 questionnaire. The results were divided into six domains and an overall index (OI), as presented in Table 1.

Table 1: Quality of life levels by domain and overall index

	Sport Practice	N	Mean	Standard Deviation	Standard Error
Dom1	No	10	11.05	1.40	0.44
Physical	Yes	39	12.52	1.44	0.23
Dom2	No	10	12.68	2.12	0.67
Psychological	Yes	39	15.12	1.40	0.22
Dom3	No	10	12.52	1.43	0.45
Social Relationships	Yes	39	13.28	1.23	0.20
Dom4	No	10	11.13	2.89	0.91
Environment	Yes	39	13.53	1.75	0.28
Dom5	No	10	12.14	2.28	0.72
Independence	Yes	39	13.82	1.35	0.22
Dom6	No	10	15.90	4.89	1.55
Spirituality	Yes	39	16.90	3.09	0.50
Overall Index	No	10	12.57	4.17	0.79
	Yes	39	14.20	1.71	0.31

Source: research data (2022)

Table 1 shows that the para-athletes exhibited better quality of life than their non-athlete counterparts (% = 12.97%), reaching an OI of 14.20, classified as high (above 14 points), primarily due to the result of Domain 6 (Spirituality), where the group obtained an index of 16.90, also higher than the result of the non-athletes in this domain (% = 16.69%).

Table 2 presents the inferential analysis of the differences in QoL between para-athletes and non-athletes with motor disabilities

Table 2: Statistical differences in quality of life

Test	Variable	p-value
Mann-Whitney	Dom 1 - Physical	0.022 *
	Dom 2 - Psychological	0.001 *
	Dom 3 – Social Relationships	0.122
	Dom 4 – Environmental	0.015
	Dom 5 - Independence	0.014 *
	Dom 6 - Spirituality	0.913
	Overall/General Index	0.002 *

Legend: * significant intergroup difference

Source: research data (2022)

Based on the OI, the para-athletes exhibited significantly better QoL($p = 0.002$) than their non-athlete counterparts. Although the greatest difference was observed in Domain 6 (Spirituality), it was not statistically significant ($p = 0.913 < 0.05$).

On the other hand, differences were detected in Domains 1 (Physical), 2 (Psychological) and 5 (Independence), with $p= 0.022$ and 0.001 and 0.014 , respectively. These three domains were considerably influenced by motor disabilities, which clearly shows the para-athletes' satisfaction in overcoming their limitations.

The differences in these domains are illustrated in graphs 1, 2 and 3.

Mann-Whitney Test for Independent Samples, Sport practice, Frequency, trocar virgulas por pontos (ex 7,50 = 7.50)

Index 12 predominates in the para-athletes' responses to Domain 1 (Physical), obtained using the WHOQOL-100 questionnaire.

Graph 2 demonstrates the clear prevalence of index 15 for Domain 2 (Psychological) and a significant advantage for the para-athletes over their non-athlete counterparts.

Graph three analyzes the results of Domain 5 (Independence), showing near-normal distribution in indices 12, 13, 14 and 15 for the para-athletes.

The other variables showed no significant intergroup differences.

Discussion

This study demonstrated the influence on the overall index of Domain 6 (Spirituality), which obtained a mean score of 16.90. It is important to note that the WHOQOL-100 includes this domain, unlike the WHOQOL-Bref, the most widely applied instrument in studies with PWD.

For example, Ciampolini *et al.* (2018) used the WHOQOL-Bref, where Physical was the statistically highest domain in a study with 31 wheelchair tennis players of both sexes.

The present study coincides only with the age group investigated by Rafael Nascimento *et al.* (2021), consisting of 60 volunteers aged 18 to 50 years. The authors assessed the QoL domains, revealing that physical activity tends to benefit social aspects. On the other hand, a comparison of the results by domain with the findings of the present study showed agreement in Domains 3 (Social Relationships) (13.79 in Rafael and 13.28 in this study) and 6 (Spirituality), with 16.82, practically the same result found in the para-athletes assessed here (16.90).

Freire *et al.* (2019) aimed at assessing the perceived QoL of 22 individuals from Pernambuco state engaged in para-athletics. The WHOQOL-Bref questionnaire was applied to the young adult age group, with Domain 4 (Environmental) obtaining the lowest result. The authors attribute this result to the difficult access to public facilities. This was not observed in the present study, since this domain scored higher than many others (13.53). Although QoL should not be investigated exclusively using questionnaires, with many studies doing so qualitatively, the WHOQOL-100 focuses on all six domains, allowing a more effective approach to the variable, resulting in a more detailed study.

Conclusion

Quality of life is an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. The initial hypothesis of this study was that motor disabilities, often debilitating, would result in a group with low QoL. However, this is not what occurred. The para-athlete group exhibited better quality of life than their non-athlete counterparts ($\Delta\% = 12.97\%$, $p = 0.02$), reaching an overall index of 14.20, classified as high (above 14 points).

The results of this study obtained for people with motor deficiencies, primarily para-athletes, made it possible for us to refute the prevailing stereotype, replacing it with a vivid impression of optimism. Meeting people with motor deficiencies, such as wheelchair users, amputees and prosthesis wearers who were motivated, positive and joyful, prompted us to rethink the previous paradigm about this group of people, particularly at such a devastating moment for the world due to the incalculable losses caused by the current pandemic. Para-athletes are an example of resilience and incredible courage, who, in addition to their daily training, work and study, and are supported by their families as they continue struggling, smiling and living for sport.

Declarations

Ethics approval and consent to participate: Before the study, all participants received the informed consent form and agreed to participate in the study. These forms will be kept on record for the legally required time. This research was conducted in accordance with the Declaration of Helsinki and was approved by the **Research Ethics Committee** of **Tiradentes University – UNIT**, under CAAE n° 26524719.4.0000.5371.

Consent to publish: Written consent to publish was obtained from the study participants and will be kept on record for the legally required time. **Availability of data and materials:** The study is ongoing, with the recruitment of older adults from different age groups, in order to establish a five-year classification. The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests: None of the contributing authors have any competing or conflicts of interest to report.

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Authors' Contributions: Writing - original draft: KD and ED; Writing – review and editing: KD, ED, RE, IV and FR; Data collection: KD; Data analysis: RE; Conception and study design: KD, ED and FR; Supervision, and project administration: KD, ED and FR. All authors revised the manuscript. All authors read and approved the final submitted manuscript.

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Figures

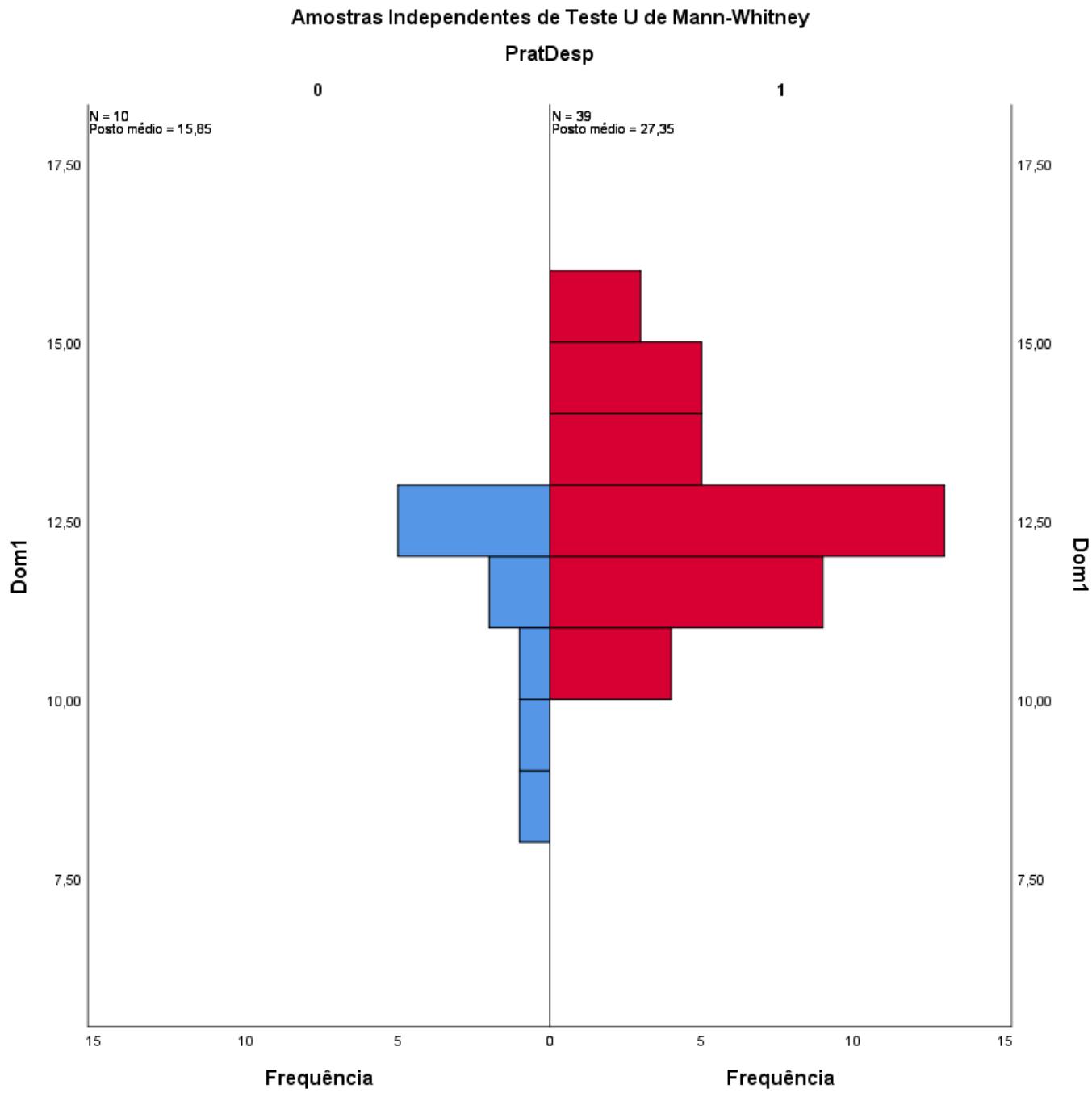


Figure 1

Results for Domain 1 (Physical), obtained using the WHOQOL for the study groups.

Mann-Whitney Test for Independent Samples, Sport practice, Frequency, trocar vírgulas por pontos (ex 7,50 = 7.50)

Legend: Red represents the results of the para-athletes and blue the non-athletes.

Source: research data (2022)

Amostras Independentes de Teste U de Mann-Whitney

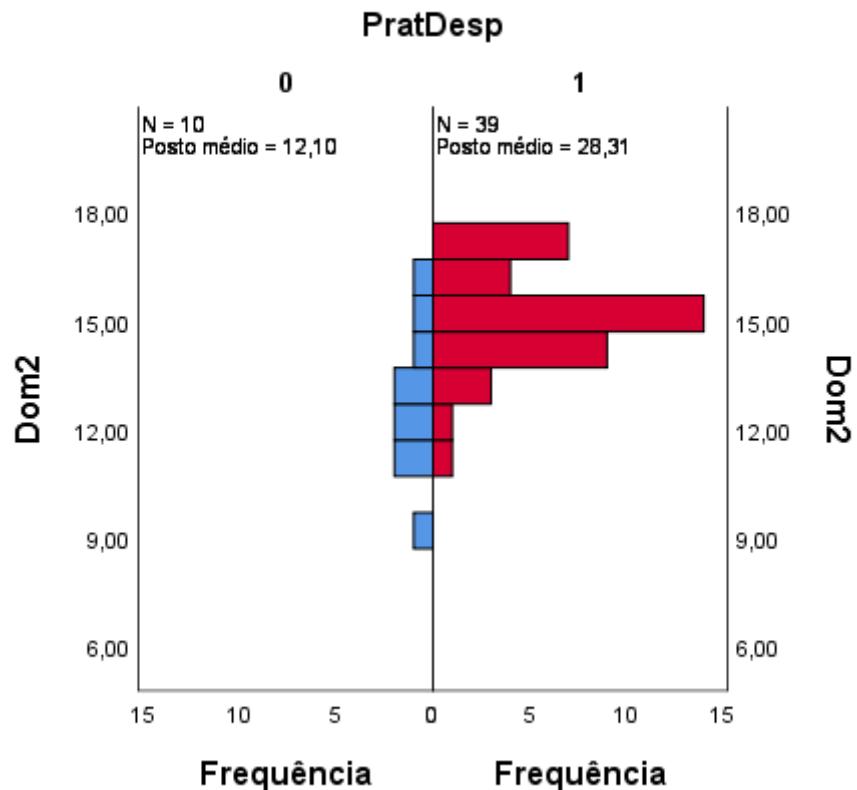


Figure 2

Results for Domain 2 (Psychological), obtained using the WHOQOL, for the study groups.

Corrigir conforme gráfico 1 + mean rank

Legend: Red represents the results of the para-athletes and blue the non-athletes.

Source: research data (2022)

Amostras Independentes de Teste U de Mann-Whitney

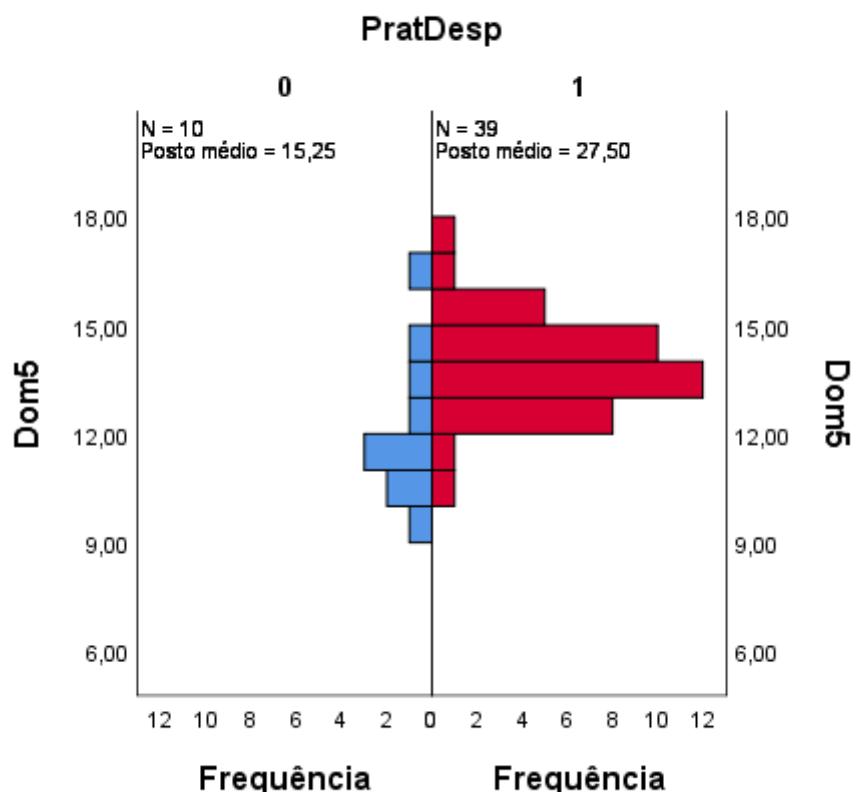


Figure 3

Results for Domain 5 (Independence), obtained using the WHOQOL, for the study groups.

Corrigir conforme gráfico 2

Legend: Red represents the results of the para-athletes and blue the non-athletes.

Source: research data (2022)