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Quality of Life in People with Parkinson's Disease and its Relationship to Disease Severity

Mauricio Ernesto Tauda Tauda*, Rocío Beatriz Bustos Barahona, Yoselyn Yudith Reyes Sánchez and David Ismael Ergas Schleef

Departamento de Salud, Universidad Santo Tomás, Chile

ABSTRACT

Introduction: The quality of life in people with Parkinson's disease (PD) is influenced by multiple factors, including the severity of the disease.

Objectives: To determine the relationship between quality of life and the severity of Parkinson's disease, identifying the most affected factors at each stage of progression.

Methodology: 30 adults with an average age of 51.417±1.80 years from the Parkinson's Association of Valdivia were administered the SF-36 survey to assess health-related quality of life (HRQoL). Additionally, the Hoehn and Yahr scale was used to determine the severity of Parkinson's disease (PD).

Results: According to the SF-36 questionnaire, women showed a better quality of life (55.08%) compared to men (47.75%). The dimensions of physical role (dimension 2) and emotional role (dimension 7) were significantly low, while vitality (dimension 5), mental health (dimension 8), and social functioning (dimension 6) showed significantly higher differences. The Hoehn and Yahr scale revealed that most participants were in a mild to moderate stage of the disease, with stage 3 being the most frequent, 30% in women and 23.33% in men. The predominant signs and symptoms were bradykinesia, resting tremor, postural instability, and balance disturbances.

Conclusions: Health-related quality of life (HRQoL) in patients classified as mild to moderate is not significantly affected by the severity of the disease. Additionally, women have a more favorable perception of their quality of life.

***Corresponding author**
Mauricio Ernesto Tauda Tauda, Departamento de Salud, Universidad Santo Tomás, Chile.

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Introduction

Parkinson's disease (PD) is a chronic, progressive neurological disorder that predominantly affects older people, usually between the ages of 50 and 60 years, although it can also occur in younger individuals [1]. The disease is characterized by a gradual loss of motor and cognitive abilities, which can lead to total disability [2]. This pathology affects both the patient's physical and mental abilities, leading to significant functional impairment. As it progresses, Parkinson's patients face a situation of double vulnerability: on the one hand, advanced adulthood, and on the other, the progressive disability imposed by the disease [3,4]. The first description of Parkinson's disease was made by the British physician James Parkinson in 1817, after observing six patients with the characteristic symptoms of the disease, which he called "paralysis agitans". Later, the famous French neurologist Jean-Martin Charcot gave it the name "Parkinson's disease" [5,6]. The average age of onset of the disease is around 60 years, although one in five patients is diagnosed before the age of 50 [7].

The disease affects men more often than women. Parkinson's disease is chronic and progressive, meaning that symptoms worsen over time. Its course is usually gradual, generally beginning on only one side of the body [8]. The disease is highly heterogeneous, and symptoms and course vary considerably among patients. There is no specific factor that can predict the course of the disease in a given patient, which means that treatment must be individualized [9].

According to the CASEN Survey (2022), in Chile, the population of elderly people reaches 3,651, 538, equivalent to 18.4% of the inhabitants. Aging not only impacts individuals and their families, but also constitutes a social, economic, political and cultural phenomenon that must be addressed by societies in an organized manner, given its magnitude and the multiple consequences it entails [10]. According to a study published in Revista Médica del Maule (2024), the mortality rate due to Parkinson's disease in Chile has shown an increase in recent years. In 2023, a mortality rate of 12.72 deaths per 100,000 inhabitants was recorded, which highlights the need to implement public health strategies focused on prevention, early diagnosis and adequate treatment of this neurodegenerative disease [11].

The prevalence of Parkinson's disease in Chile remains uncertain. However, it is estimated that around 15,000 people receive care under the GES system (Garantías Explícitas en Salud), which suggests a total of approximately 35,000 affected people in the country, according to Matus and Vidal (12). This disease not only impacts the individual, but also his or her family and social environment, generating psychoemotional, economic and social disorders that must be managed by both the patient and his or her family.

The stages of the disease are accompanied by feelings such as sadness, hopelessness, depression, anguish, anger, dissatisfaction and uncertainty [13]. These manifestations, both motor and non-motor, affect the functionality of the individual and contribute to the deterioration of quality of life. PD patients have a markedly lower quality of life compared to the general population, due to the impairment of both physical and mental health [14].

In relation to quality of life (QoL), it is a subjective concept that refers to how individuals perceive their well-being in relation to various aspects of their life [15]. In this sense, the assessment of quality of life in people with chronic diseases, such as Parkinson's disease, has been the subject of studies in recent decades [16]. Traditional methods of measuring health are based on objective indicators such as biochemical, physiological and anatomical markers. However, the need for a more comprehensive approach was identified, allowing the assessment of the subjective well-being of patients, as proposed by the WHO, which defines health as a complete state of physical, mental, and social well-being [17].

Since the 1970s, health-related quality of life (HRQoL) indices have been developed, especially during the 1980s. These indices allow the assessment of the function of patients with chronic diseases and have facilitated the measurement of both medical and social aspects [18]. Instruments to assess quality of life have become essential tools in research, clinical trials, cost-benefit analysis studies and hospital management, allowing a multidimensional approach to well-being, considering physical, mental, emotional and social well-being [19].

Currently, questionnaires such as the SF-36 are widely used to measure quality of life in patients with various pathologies, including neurodegenerative diseases such as PD. These questionnaires not only allow measuring the patient's functional status, but also his or her perception of well-being, and provide quantitative data that reflect the individual's state of health from a subjective perspective [20,21].

In summary, the importance of measuring quality of life in patients with PD lies in the need to understand how this disease affects the well-being of individuals on multiple levels. By measuring quality of life, it is possible to identify the dimensions that require intervention, improve care and treatment, and provide appropriate support at both the medical and social levels. This comprehensive approach allows progress to be made in improving the health and well-being of Parkinson's patients and, ultimately, their quality of life. Therefore, the aim of this study is to determine the relationship between quality of life and severity of Parkinson's disease, assessing how different degrees of progression affect the physical, emotional, social and cognitive well-being of patients. In addition, it seeks to identify the factors most affected at each stage of the disease, both in motor and non-motor symptoms, in order to understand how these influence the quality of life throughout its evolution.

Materials and Methods

The present study has a quantitative approach and follows a non-experimental, observational and cross-sectional design, which allows analyzing the relationship between quality of life and severity of Parkinson's disease at a single point in time, without intervening in the natural course of the disease. For this purpose, structured questionnaires and direct observation were used to evaluate the different aspects of the quality of life of the participants and correlate them with the severity of the symptoms of the disease in each patient. At the beginning of the study, an "Informed Consent" document was given to both the director of the Asociación Parkinson Valdivia and the study participants. This document details the type of research, the procedures to be followed, the objectives, the justification for the study, the duration of the study, as well as the possible risks and adverse effects, guaranteeing transparency and respect for the rights of the participants.

Study Population and Sample

The study population consisted of older adults with a mean age of (51.42± 1.80 years), residents of the commune of Valdivia, Los Ríos region, who suffer from Parkinson's disease. The participants were selected by means of a sampling by intention, taking as a base those affiliated to the Parkinson Valdivia Association. This criterion allowed us to include only individuals with a confirmed diagnosis and access to support services, which facilitates data collection and guarantees the relevance of the findings for this specific group.

Inclusion Criterio

Belong to the Valdivia Parkinson's Association, which ensures that participants have a confirmed diagnosis of Parkinson's disease, be able to understand and respond to the questionnaire and the assessments performed, ensuring the validity of the data collected.

Exclusion Criterio

Diagnosis of other neurological diseases that may interfere with the evaluation of Parkinson's disease, such as Alzheimer's disease or similar neurodegenerative disorders, failure to attend the day set for the evaluation and application of the questionnaire, as this would prevent the collection of the necessary data, presenting severe cognitive impairment that prevents understanding and adequate response to the questions of the questionnaire, which would affect the reliability of the information obtained.

Description of the Procedure

The study was carried out over three consecutive days, following a structured protocol to ensure the quality of the data and the comfort of the participants. The stages carried out on each day are detailed below:

Day 1: Health History Questionnaire

Participants attended an initial session where the purpose of the study was explained to them and their informed consent was collected. Subsequently, they completed a questionnaire that included sociodemographic data (age, gender, schooling) and health history. Data were collected on conditions such as arterial hypertension, diabetes mellitus, dyslipidemia, cognitive disorders, osteoarthritis, sensory alterations (auditory and visual), COPD, asthma, sedentary lifestyle and incontinence. We also inquired about their medical control in the office and other pathologies related to Parkinson's disease.

Day 2: Quality of Life Assessment

During this day, participants completed the SF-36 questionnaire, a validated instrument that measures eight dimensions of health-related quality of life. The survey was conducted in a quiet environment, under the supervision of the researcher, who was available to answer any questions and ensure the accuracy of the responses.

Day 3: Parkinson's Severity Assessment

On the third day, the severity of the disease was measured using the Hoehn and Yahr Scale, which classifies the progression of Parkinson's disease in five stages, from mild symptoms to total dependence, and was performed by a trained professional, ensuring accuracy in the classification of each participant. This assessment was performed by a trained professional, ensuring accuracy in the classification of each participant.

Data Recording and Validation

To ensure the quality and accuracy of the information collected, the following data validation procedures were implemented

Review During Collection

Each questionnaire was reviewed immediately after completion, in the presence of the participant, to identify incomplete or inconsistent responses. The researchers supervised the application of the surveys, clarifying doubts in real time to minimize interpretation errors.

Training of the Work Team

All personnel involved in data collection received prior training on the handling of the measurement instruments (SF-36 and the Hoehn and Yahr Scale) to ensure their correct application. Simulations of the evaluations were carried out before starting the field work, standardizing procedures.

Subsequent Quality Control

The data were entered into an electronic database designed specifically for the study. This database included automatic constraints and controls to avoid out-of-range values or inconsistencies. Double data entry was performed: two team members recorded the data independently, and any discrepancies were identified and corrected.

Internal Consistency Tests

Statistical analyses will be applied to evaluate the internal consistency of the responses, especially in the quality of life instruments (such as the SF-36). Inconsistent responses or responses outside the expected patterns were checked in the original questionnaires and, when necessary, reconfirmed with the participant. This process ensured that the data were reliable, complete and valid for subsequent statistical analysis, complying with ethical and scientific standards.

Evaluation Form

Once informed consent was obtained, each participant completed the Evaluation Form, providing detailed information about their health, including conditions such as hypertension, depression, diabetes mellitus, cognitive impairment, dyslipidemia, sedentary lifestyle, osteoarthritis, hearing impairment, COPD, visual impairment, asthma and incontinence. These conditions can affect both physical and mental health, and many of them are interrelated, which can significantly influence the quality of life of individuals. Through this questionnaire, the participants' schooling was also assessed. In addition, they were asked if they were receiving medical treatment for any specific pathology, besides Parkinson's disease, in order to obtain a comprehensive view of their health status.

Quantification of the Severity of Parkinson's Disease

The severity of the disease was quantified through the Hoenh and Yard scale, during the meetings of the association (6 people per weekly meeting) as well as in the functional and cognitive stimulation workshops that the students of this thesis carried out as support to the association. This scale consists of 5 stages to classify the patient in any of the 5 stages of this scale was performed with a clinical assessment of each individual consisting of the observation of: tremor at rest, postural instability, bradykinesia, assessment of cognitive status through mini mental test in addition to the evaluation of gait. All of the above was performed in From the observations made, each subject was classified according to the scales: Graded 1 ,2 3 etc.(must be described) The evaluations were individual, to assess the progression and severity through the scale of Hoenh and Yarh. We took advantage of the meetings of the Valdivia Parkinson's Association to make a clinical assessment of each individual as well as to interview them and conduct functional and cognitive stimulation workshops.

This scale classifies patients in five stages according to the motor disability and the symptoms they present:

Table 1 Hoenh and Yarh Scale

Stage	Description
Stage 1	Unilateral symptoms: Symptoms are mild and only affect one side of the body. There is no significant impairment of motor function.
Stage 2	Bilateral symptoms without significant disability: Symptoms are bilateral, but the patient is still able to perform daily activities without assistance.
Stage 3	Moderate disability, but still independent: The patient has a loss of balance and decreased motor coordination, but remains independent in daily activities.
Stage 4	Severely disabled, but still ambulatory: The patient needs assistance for daily activities and has difficulty walking without support. However, he/she can still walk to a limited extent.
Stage 5	Complete disability: The patient is totally dependent and has difficulty moving, even with assistance. He/she is usually in a wheelchair or bedridden.

Note: Scale is used to assess disease progression and functional capacity of Parkinson's patients, allowing health care professionals to adequately monitor symptom progression.

Estimation of Quality of Life

The value of quality of life was obtained through the SF-36 health-related quality of life (HRQOL) questionnaire, which generically evaluates the perception of the state of health of each individual, considering 8 dimensions: 1 physical function, 2 physical role, 3 bodily pain, 4 general health, 5 vitality, 6 social function, 7 emotional role and 8 mental health. For the application of this questionnaire, the president of the association was asked to grant a time determined by her at each meeting. The questionnaire was self-applied by each member and each member of the research team was present to resolve doubts or to provide any other type of help to those who could not mark the alternatives. Finally, 30 questionnaires were completed, with a total of 35 members (discarded due to exclusion criteria) in 5 meetings with an estimated time of 15 minutes for each member. The results of the survey are expressed as a percentage, being over 50% good health or better quality of life and less than or equal to 50% worse health or worse quality of life.

Statistical Analysis

To determine the characteristics of the study population in relation to quality of life and severity of Parkinson's disease, central tendency and dispersion analyses were performed. In particular, quality of life was assessed in terms of its eight specific dimensions. Likewise, in order to analyze the individual and combined effect of the independent variables sex and dimensions of quality of life on the dependent variable (quality of life), a factorial analysis of variance (factorial ANOVA) was applied. This analysis made it possible to determine whether there were significant differences in quality of life between men and women (effect of the first factor) and whether the different dimensions of quality of life showed different behaviors (effect of the second factor). In addition, we assessed whether the interaction between the factors sex and dimension influences quality of life. Thus, two main effects were identified (one for each factor) and the effect of the interaction between the two.

Results

Table 2: Distribution of Participants According to Parkinson's Disease Stage (HoenhandYahr Scale)

Stage of disease	Men (%)	Women (%)	Total (%)
0 (No signs)	0.00	0.00	0.00
1 (Unilateral symptoms)	10.00	12.00	11.00
2 (Bilateral symptoms, without balance impairment)	20.00	18.00	19.00
3 (Mild to moderate impairment, with balance disturbances, but independent)	23.33	30.00	26.67
4 (Severe disability, but still able to walk or stand unassisted)	6.67	8.00	7.33
5 (Confined to bed or wheelchair)	0.00	0.00	0.00

Note: It is observed that the majority of the population studied is in stage 3, with a higher proportion of women (30%) than men (23.33%). No participant was located in extreme stages 0 or 5 at the time of evaluation.

The results Table 2 indicate that most of the participants are in stage 3 of the Hoenh and Yahr scale, reflecting moderate Parkinson's disease involvement. This stage is characterized by mild to moderate balance disturbances, but patients are still independent. Although not the most severe stage, the presence of a significant percentage at this stage suggests a need for interventions that improve quality of life and prevent disease progression. The fact that no participant is at the extremes of the scale (0 or 5) is relevant. On the one hand, absence at stage 0 indicates that all participants have clear signs of the disease. On the other hand, absence at stage 5, which corresponds to the most severe cases, could be interpreted as positive, since it implies that no participant is completely dependent or confined to a bed or wheelchair. In summary, the results are not necessarily "bad" because there is no predominance of advanced stages (4 and 5), but neither are they "good" since most participants present significant impairment that impacts their daily functionality. This underlines the importance of comprehensive management programs and targeted therapies to maintain independence and quality of life in these patients.

Table 3: Average Quality of Life According to the SF-36 Questionnaire, Broken Down

Sex	Women	Men
Values	55.082±1,925	47.751±1,683

Note: Values reflect the average quality of life measures assessed by the SF-36 questionnaire in the study group.

Table 3 describes the results of the quality of life analysis, obtained using the SF-36 questionnaire, which showed significant differences between men and women in the study group. On average, women presented a score of 55.082 ± 1.925, while men obtained a score of 47.751 ± 1.683. According to the SF-36 scale, where values can range from 0 to 100, these results indicate a moderate perception of quality of life in both groups. Scores between 0 and 50: reflect a low perceived quality of life. Men, with an average of 47.751, are in the lower range, indicating greater negative impact of the disease or associated conditions Scores between 51 and 75: Indicate moderate to good quality of life. Women, with an average of 55.082, are in this range, suggesting a slightly better perception of their overall health status.

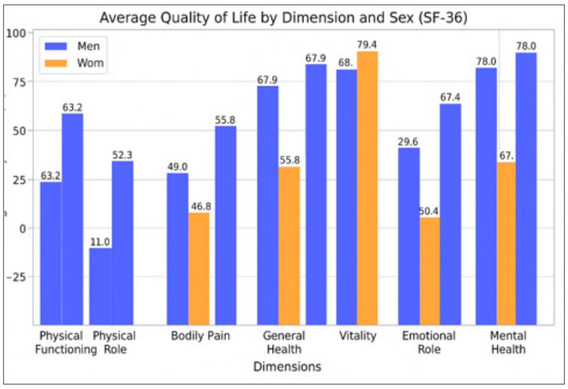

Figure 1: SF-36 Survey

Figure 1 describes the results obtained in the quality of life measurements of the participants of the Parkinson Valdivia Association (APV), differentiated by men and women according to the dimensions of the SF-36. The criterion used is that a quality of life above 50% is considered "good quality of life" and below 50% "poor quality of life".

Dimension 1: Physical Function
Men: The mean is 53.24, with a standard deviation of 22.08. Men report moderate physical function, being just above the 50% threshold, indicating that physical quality of life in this group is acceptable, but with significant variability among participants. Women: The mean is 61.15, with a standard deviation of 16.35. Women report somewhat better physical function than men, with a score significantly above 50%, suggesting a better physical quality of life in this group, with less variability between individuals. Women report better physical function than men, with a significant difference in means and less variability in their perception of physical function.

Dimension 2: Physical Role
Men: The mean is 11.03, with a standard deviation of 11.16. Men report a low ability to perform their physical activities, with a score significantly below 50%, indicating a poor quality of life in this aspect. Women : The mean is 18.75, with a standard deviation of 10.21. Women also have a low score, although slightly higher than men, still indicating difficulties in performing physical roles. Both populations have limited physical role, with assessment below the 50% threshold. Women show a level of improvement over men, but both genders are at a level of poor quality of life in this dimension.

Dimension 3: Body Pain
Men: The mean is 49.53, with a standard deviation of 25.48. Men report a moderate level of bodily pain, being just below the 50% threshold, indicating that quality of life in terms of pain is poor, but not extreme. Women: The mean is 59.00, with a standard deviation of 21.11. Women report a higher level of pain compared to men, exceeding the 50% threshold, suggesting a worse perception of bodily pain in this group. Although both groups report moderate pain, women experience more pain than men, contributing to a worse quality of life in this dimension.

Dimension 4: General Health
Men: Mean is 49.59, with a standard deviation of 22.98. Men have a moderate overall health perception, with a score just below the 50% threshold, suggesting an acceptable but not excellent overall quality of life. Females: The mean is 43.23, with a standard deviation of 18.95. Women report worse overall health than men, with a score below 50%, indicating poor quality of life in this dimension. Men have a level advantage in the perception of their general health, but both genders are below the threshold of good quality of life in this aspect.

Dimension 5: Vitality
Men: The mean is 68.93, with a standard deviation of 26.53. Men report moderate vitality, with a score above 50%, indicating a good quality of life in terms of energy and well-being. Females: The mean is 81.73, with a standard deviation of 14.54. Women have notably better vitality than men, with a score significantly above 50%, reflecting an excellent quality of life in terms of energy and well-being. Vitality is a strength in quality of life, especially in women, who have a much more favorable perception than men.

Dimension 6: Social Function
Males: The mean is 64.69, with a standard deviation of 20.84. Men have moderate social function, with a score above the 50% threshold, indicating an acceptable quality of life in terms of their social interactions. Females: The mean is 65.38, with a standard deviation of 21.14. Women have a very similar social function as men, with a score also above 50%. No significant differences in social function are observed between men and women, and both groups have an acceptable quality of life in this aspect.

Dimension 7: Emotional Role
Men: The mean is 17.65, with a standard deviation of 11.74. Men report a very low score on this dimension, indicating a limited emotional role and a poor quality of life in terms of emotional well-being. Females: The mean is 29.48, with a standard deviation of 25.59. Women present a significantly better perception of their emotional role, although still below 50%, suggesting a low emotional quality of life, but better than that of men. Both genders have a poor emotional quality of life, but women have a better perception of their emotional well-being than men.

Dimension 8: Mental Health
Males: The mean is 67.35, with a standard deviation of 18.80. Men have a good perception of their mental health, with a score above 50%, indicating an acceptable mental quality of life. Females: The mean is 81.92, with a standard deviation of 12.00. Women report significantly better mental health than men, with a score significantly above 50%, reflecting an excellent mental quality of life. Mental health is a strength in quality of life, especially in women, who have a better perception than men.

General Summary
Women: They have significantly better quality of life in dimensions such as vitality, mental health and physical function. However, women report greater bodily pain and lower overall health than men. Men: Although they report higher overall health, men have lower evaluations in most dimensions, especially in physical and emotional role, reflecting areas of improvement in their quality of life. In general terms, it is observed that women have a higher quality of life than men in key dimensions, but both groups present critical areas that need to be addressed to improve their overall well-being.

Table 4: Analysis of Variance (ANOVA) of Quality of Life between the Dimensions of the SF-36 Survey and by Sex ($P \leq 0.05$)

Source	Type III Sum of Squares	DF	Media and communications	F	Pvalue
Corrected model	109320.026[a]	15	7288.002	18.918	.000
Interception	623192.201	1	623192.201	1617.708	.000
Dimension	102344.341	7	14620.620	37.953	.000
Sex	3167.398	1	3167.398	8.222	.005
Dimension * Gender	2497.951	7	356.850	.926	.487
Error	86291.855	224	385.231		
Total	818078.852	240			
Corrected Total	195611.881	239			

Note: A significant difference in quality of life is observed both between the dimensions of the SF-36 survey ($P \leq 0.05$) and between sexes ($P \leq 0.05$). However, no significant interaction is found between dimensions and sex ($P = 0.487$).

The results of the Analysis of Variance (ANOVA) presented in Table 4 indicate the following: Corrected Model: the value of the "Sum of Squares of the Corrected Model" is 109,320.026, which reflects the variability explained by the analysis model. The "F" obtained is 18.918 and the P value is 0.000, indicating that the overall model is statistically significant, i.e., the overall analysis of differences in quality of life is relevant. Intercept: The sum of squares of the intercept is 623,192.201, with an F of 1617.708 and a P value of 0.000, confirming that the model has a significant intercept and adequately explains the differences in the overall quality of life. Dimension: A significant difference is observed between the dimensions of the SF-36 survey, with a sum of squares of 102,344.341, an F of 37.953 and a P value of 0.000. This suggests that the survey dimensions have a significant and differential impact on the quality of life of the participants. Sex: A significant difference is found between the sexes in terms of quality of life, with a sum of squares of 3,167, 398, an F of 8.222 and a P value of 0.005. This indicates that women and men experience differences in quality of life as measured by the SF-36. Interaction between Dimension and Sex: The analysis shows a P value of 0.487, indicating that there is no significant interaction between the dimensions of quality of life and sex. That is, the relationship between the quality of life dimensions and sexes does not vary significantly overall, suggesting that the observed differences in the dimensions do not depend on whether the participants are male or female. Quality of life varies significantly between the dimensions of the SF-36 survey and between the sexes, but there is no evidence of a significant interaction between the dimensions and sex, implying that, although men and women have differences in their quality of life, the individual dimensions of quality of life are not significantly influenced by the sex of the participants.

Table 5: Significant Differences in Quality of Life (Tukey)

Dimension	Average (%)	Comparison
Physical role (dimension 2)	14,37%	Download
Emotional role (dimension 7)	22,78%	Download
General health (dimension 4)	46,83%	Moderate
Physical limitations (dimension 3)	53,63%	Moderate
General health status (dimension 1)	56,67%	Moderate
Social function (dimension 6)	69,45%	High
Mental health (dimension 8)	73,67%	High
Vitality (dimension 5)	81,92%	High

Note: Dimensions 2 (Role) and 7 (Emotional Role) obtained the lowest scores, indicating areas of greatest negative physical impact on quality of life.

The results Table 5 of the analysis of the quality of life dimensions using the SF-36 survey show significant variability between the different areas evaluated.

Low Dimensions

Physical role (14.37%) and emotional role (22.78%) were the dimensions with the lowest values, indicating a significant impact on the participants' ability to perform physical and emotional activities. This highlights the need for interventions aimed at improving functionality and emotional well-being, which are essential to maintain an adequate quality of life in patients with Parkinson's disease (PD).

Median Dimensions

The dimensions general health (46.83%), physical limitations (53.63%) and general health status (56.67%) were at intermediate levels, suggesting mixed perceptions of health status and physical limitations. Although they do not reach alarm levels, they reflect areas where work can be done to avoid further deterioration.

High Dimensions

The highest scores were observed in social function (69.45%), mental health (73.67%), and especially in vitality (81.92%), which evidences good social support and positive perception in these areas. These results highlight resilient aspects in the population studied, which may be key to design therapeutic strategies focused on strengthening these strengths.

Clinical Significance

Low Dimensions

The low physical and emotional role scores indicate a critical need to implement multidisciplinary programs that include physiotherapy, adapted physical training and psychological support. This would help improve daily functionality and reduce the emotional impact associated with PD limitations.

Moderate Dimensions

These dimensions represent areas where preventive actions should be prioritized, such as early control of physical limitations and educational strategies to optimize general health perception.

High Dimensions

The good performance in vitality, mental health and social function suggests that patients could benefit from community interventions that reinforce social interaction and group activities. In conclusion, these results are valuable for targeting specific and personalized interventions, improving quality of life in patients with PD, and underscore the importance of addressing both the patient's weaknesses and strengths in a comprehensive clinical approach.

Discussion

The results obtained in the study provide a comprehensive view on the relationship between quality of life and Parkinson's disease severity, identifying the areas most affected at different stages of disease progression. The study explores how quality of life in people with Parkinson's disease varies by severity of the condition and gender. The majority of participants were at stage 3 of the Hoehn and Yahr Scale (30% women and 23.33% men), indicating moderate impairment, with mild to moderate balance disturbances, but with independence still preserved.Women reported better overall quality of life (55.082 ± 1.925) compared to men (47.751 ± 1.683), although they experienced greater bodily pain (59%) and worse perception of general health (43.23%). The most affected dimensions were physical role (14.37%) and emotional role (22.78%), while the dimensions of vitality (81.92%), mental health (73.67%) and social function (69.45%) stood out as significant strengths. The differences observed among patients underscore the need to implement multidisciplinary and personalized interventions, which not only address specific weaknesses, but also enhance the patient's strengths.

Therefore, to optimize patients' well-being, it is crucial to recognize that Parkinson's disease is a chronic and progressive condition, characterized by a gradual deterioration of symptoms over time [22]. In this context, continuous assessment of disease severity becomes indispensable, as it allows timely detection of changes in the patient's condition [23]. This approach enables informed decision making, favoring adjustments in treatments and the implementation of interventions during the initial stages of progression [24].

Assessing the severity of Parkinson's disease is a fundamental pillar for both clinical management and improvement of patients' quality of life [25]. This process enables the creation of individualized treatment plans, carefully tailored to the specific needs of each patient, to optimize the effectiveness of interventions. According to Alegre-Ayala, an accurate assessment of severity allows for efficient adjustment of both pharmacological and non-pharmacological treatments, contributing to more effective symptom management [26].

In addition, assessment of severity is essential to understanding how the disease impacts patients' daily lives; identifying specific areas of impairment, such as balance, mobility, and emotional well being, opens the door to implementing interventions designed to significantly improve these aspects [27]. It is especially important to consider that the patient's ability to maintain independence and participate in social activities directly influences their quality of life and overall well-being.

Recent research, such as that published in the Revista Chilena de Neuropsiquiatría, underlines that a proper assessment of severity not only helps to identify the most affected areas in the patient's life, but also allows the development of a more effective and personalized therapeutic approach [28]. This comprehensive approach is crucial to address the multiple challenges posed by this neurodegenerative disease.

Under this line, the study by Safarpour and Willis addresses the clinical application of continuous monitoring of Parkinson's disease, highlighting the importance of both assessing symptoms and non-motor symptoms in a standardized manner to improve clinical decision making [25]. Although the article is a review of several studies, it focuses on the use of monitoring tools and protocols in Parkinson's patients, generally ranging in age from 50 to 80 years. The approach includes the use of portable devices and mobile technologies to measure in real time variables such as tremor, rigidity, bradykinesia, as well as sleep disturbances, depression and cognitive impairment. These tools make it possible to continuously assess disease progression and adjust pharmacological and non-pharmacological treatments more precisely, optimizing the patient's quality of life.

The study by Antonini and Chaudhuri focuses on the importance of personalized therapies based on continuous assessment of Parkinson's disease severity, with the goal of improving patients' quality of life. In their research, the authors highlight the need to comprehensively address both motor and non-motor symptoms of the disease [29]. Throughout their study, which is based on a review of multiple clinical and observational trials, they monitor that personalized therapies, which consider severity and individual variations in symptoms, prove to be more effective than standard approaches. Motor symptoms, such as tremor, rigidity and bradykinesia, have traditionally been associated with Parkinson's disease, but non-motor symptoms, such as cognitive impairment, depression, fatigue and sleep disturbances, also play a crucial role in patients' quality of life.

The researchers suggest that by designing treatments that integrate both types of symptoms, it is possible to significantly improve patients' overall well-being, reducing the impact of the disease on daily life. The study, which was based on Parkinson's patients of different ages, used a variety of treatment protocols, including pharmacological and non-pharmacological interventions, and provided detailed insight into how treatment customization can alleviate the debilitating effects of the disease. The results indicate that patients who received treatment tailored to the specific severity of their disease experienced a marked improvement in their functional capacity and quality of life. This multidisciplinary approach, which also considers psychosocial and emotional aspects of the patients, highlights the importance of a comprehensive and continuous assessment to optimize disease management.

In relation to quality of life, the study by Chaudhuri and Odin addresses the relationship between non-motor symptoms and quality of life in patients with Parkinson's disease (PD), highlighting how these symptoms can have a significant impact on daily life, often even more so than motor symptoms [30]. In their research, the authors explore a variety of non-motor symptoms, such as depression, anxiety, cognitive impairment, fatigue, and sleep disturbances, and how these affect the disease experience in complex ways. The work underscores the importance of a multidimensional approach to PD assessment, which is not limited to the classic motor aspects, but also considers these non-motor symptoms that are central to patients' quality of life. The research also stresses the need to use more comprehensive and standardized assessment tools, which allow healthcare professionals to more effectively identify and address these symptoms, thus contributing to improved clinical outcomes and patients' overall well-being.

The article by Perez-Lloret et al., entitled *Impact of non-motor symptoms on quality of life in patients with Parkinson's disease*, focuses on how non-motor symptoms, such as depression, anxiety, and cognitive impairment, affect the quality of life of patients with Parkinson's disease (PD) [31]. The authors highlight the need for a comprehensive assessment that includes these symptoms to improve disease management. In this study, patients diagnosed with PD who attended a clinic specializing in movement disorders were included. An observational and cross-sectional methodology was used, where standardized questionnaires were administered to assess the presence and severity of non-motor symptoms, as well as specific scales to measure health-related quality of life. The results indicated that a significant proportion of patients experienced non-motor symptoms that affected their quality of life.

Depression and anxiety were the most prevalent symptoms, followed by cognitive impairment. Furthermore, it was observed that the presence and severity of these non-motor symptoms were negatively correlated with patients' quality of life. The authors conclude that it is essential to perform a comprehensive assessment of non-motor symptoms in patients with Parkinson’s disease (PD), as their presence and severity have a significant impact on quality of life. They suggest that integrating the assessment of these symptoms into daily clinical practice may lead to more effective disease management and an improvement in patients' overall well-being [32].

The study by Barone et al. provides a detailed review of non-motor symptoms in PD, a fundamental aspect in understanding and managing this neurodegenerative disease. In this paper, the authors explore various non-motor symptoms, such as sleep disturbances, autonomic dysfunction, and cognitive impairments, which have a significant impact on the quality of life of PD patients. Through a comprehensive review of the literature, the prevalence of these symptoms in PD patients and their relationship with disease progression are analyzed. In addition, the authors discuss the impact of these symptoms, which are often not adequately addressed in conventional treatments, potentially contributing to a decrease in patients' quality of life. They also emphasize the need for a comprehensive approach to disease management that considers both motor and non-motor symptoms, given their combined effect on patients' well-being [32].

Regarding gender, the study by Zhang et al. examines the differences between men and women in relation to prevalence, severity, and quality of life in patients with PD. The research focused on a representative sample of PD patients at different stages of the disease, including both men and women. The authors found that although the prevalence of the disease is higher in men, women with Parkinson's tend to experience greater functional disability. In addition, women showed greater cognitive impairment compared to men, especially in advanced stages of the disease. The study highlights that women with PD experience a higher frequency of non-motor symptoms, such as sleep disorders, depression, and anxiety, contributing to a more significant decrease in quality of life compared to men. This difference could be related to biological factors, such as hormonal influence, and social factors, such as access to treatment or patient care. In terms of quality of life, women with PD also showed worse outcomes in areas such as mobility and the ability to carry out daily activities [33].

Along the same lines, the study conducted by Santos, Cardoso, and Ribeiro compared quality of life between men and women with PD, with special emphasis on non-motor symptoms. The results indicated that, compared to men, women with PD experience significantly lower quality of life, particularly in areas related to non-motor symptoms such as anxiety, depression, and cognitive impairment. In addition, women showed a higher prevalence of psychological symptoms affecting their overall well-being, which may be associated with biological, hormonal, and psychosocial factors. These findings highlight the need for a more personalized approach to managing non-motor symptoms in women with PD, suggesting that treatment strategies should focus specifically on addressing anxiety, depression, and cognitive impairment to improve patients' quality of life [34].

In this study, Giladi et al. examined gender differences in PD progression and response to treatment. The study showed that women develop PD at an older age than men but experience faster progression of motor symptoms. In addition, men tend to have an earlier onset of the disease and a slower progression in terms of severity of motor symptoms. The analysis also revealed that women with PD experience a greater impact on their quality of life due to non-motor symptoms, such as sleep disturbances and depression, highlighting the need to address gender factors when developing therapeutic strategies. The authors suggest that response to treatment may differ between genders, making it crucial to consider biological and social factors in the therapeutic approach to PD [35].

The analysis of the results obtained in the study reinforces the relevance of integrating a gender-differentiated assessment in the management of Parkinson's disease (PD). The data show that, although women reported a better overall quality of life compared to men, their experience of the disease is more complex due to a higher prevalence of non-motor symptoms such as bodily pain, poorer perception of general health, and emotional disturbances. This finding is consistent with the literature pointing out that women with PD face greater functional disability and cognitive impairment, especially in the later stages of the disease, underscoring the need for personalized intervention [36].

The fact that women experience greater pain and poorer overall health despite having a better overall quality of life indicates that while motor aspects may be similar between genders, emotional, cognitive, and psychosocial factors play a crucial role. The dimensions most affected in women, such as physical and emotional role, reflect specific difficulties that should be addressed in a comprehensive and multidisciplinary manner, focusing not only on motor symptoms but also on emotional and cognitive well-being [37].

The therapeutic approach, therefore, must consider these gender differences, both in terms of disease experiences and the resources needed to optimize quality of life. In addition to addressing motor symptoms, it is imperative that interventions address non-motor symptoms that particularly affect women, such as emotional disturbances, pain, and cognitive problems. This highlights the need to develop treatment plans that are not only based on clinical severity but also integrate the subjective experience of patients, adjusting to their specific needs [38].

Ultimately, the information gathered not only reinforces the importance of assessing disease severity on an ongoing basis but also highlights the urgency of a holistic and personalized gender-sensitive treatment approach to improve the quality of life of patients with Parkinson's disease [39].

Conclusions

The results of the study underscore the importance of considering both the severity of Parkinson's disease and gender differences in the management and assessment of the disease. Although the prevalence of the disease is higher in men, women experience greater functional disability and more marked cognitive impairment, which more significantly affects their quality of life, especially in areas such as anxiety, depression and sleep disorders. In addition, women reported a worse perception of general health and experienced greater bodily pain compared to men, reinforcing the need for a comprehensive assessment that addresses both motor and non-motor symptoms.

The most affected dimensions in both genders include physical and emotional role, which highlights the relevance of interventions that not only treat motor symptoms, but also address the psychosocial and emotional aspects of the disease. The findings suggest that therapeutic interventions should be personalized and multidisciplinary, adapting to the specific needs of each patient, especially those arising from gender differences. Therefore, the therapeutic approach should integrate a continuous and detailed assessment of motor and non-motor symptoms, as well as consider the biological, emotional and psychosocial factors that influence patients' quality of life. This holistic approach is essential to improve the overall well-being of people with Parkinson's disease and optimize treatment outcomes. Ultimately, intervention strategies must be designed on an individualized basis, taking into account both the progression of the disease and the specific characteristics of each patient.

Conflicts of Interest

No conflicts

Reference

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