Journal of Family Medicine

Open Access

Austin Publishing Group

Research Article

Quality of the Support Network and Family Functionality in patients with Parkinson’s Disease

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Received: March 27, 2023
Accepted: April 27, 2023
Published: May 04, 2023

Abstract

Background: An inadequate support network and dysfunctional family functionality can be associated with a greater complication of your disease, as well as higher costs of care. These two elements play a decisive role in the clinical evolution of the patient with Parkinson’s disease.

Objective: To evaluate the quality of the Support Network and Family Functionality in patients with Parkinson’s Disease.

Methods: Non-experimental, cross-sectional, analytical and prospective study. The inclusion criteria were valid beneficiaries, with diagnosis of Parkinson’s Disease, it was carried out during the period from January to June 2022. To evaluate the Support Network the Gijon Scale was used and for Family Functionality the FF-SIL Test. For the statistical analysis we used descriptive statistics with measures of central tendency and dispersion, in the inferential analysis Fisher’s Exact Test and odds ratio were used.

Results: Twenty-seven people diagnosed with Parkinson’s disease were evaluated. 21 participants (77.8%) had a moderately functional family, four with a dysfunctional family (14.8%) and two (7.4%) with a functional family. On the other hand, in the Gijon Scale we find the following: 15 patients (55.6%) with good/acceptable social situation and 12(44.4%) with social risk. When making an association between these variables, we found statistical significance with the absence of a partner (p 0.04), income of 1-2 minimum wages (p 0.001) and low socioeconomic level (p 0.02).

Conclusions: Although there is no statistical association between the support networks with respect to family function, both aspects influence the environment and care of the patient with Parkinson’s. In turn, it is necessary to evaluate other interesting variables such as the presence of a partner, income and socioeconomic level.

Keywords: Support network; Family functionality; Parkinson’s disease

Introduction

Parkinson's disease is a motor-cognitive disorder, which is present in the elderly, which is progressive and disabling for the sick patient, and which is also frequently found in family medicine medical care. Worldwide, it is estimated that four to five million people over the age of 50 may have Parkinson's disease [1]. The diagnosis of Parkinson's disease within the nucleus of the family generates a series of imbalances in the way of living together, therefore, it produces paranormative crises in the family and its elements, which causes dysfunction on its members [2]. It also impacts the quality of support that the patient receives in terms of their physical and medical needs, as well as the needs of the family to be able to face the disease. This is associated with the worsening of said disease, which in turn translates into an increase in hospital medical care costs and a higher risk of mortality [3].

Although the exact number of patients with Parkinson's is unknown, a prevalence of 50 new cases per 100,000 inhabitants per year is estimated [4]. Without an efficient approach by the family doctor, the prognosis worsens and the morbidity

Citation: Guerra-Bulnes CM, Mercado-Flores HE, Lopez-Moran JA. Quality of the Support Network and Family Functionality in patients with Parkinson’s Disease. J Fam Med. 2023; 10(2): 1328.

and mortality rate rise [5]. In our state, Nayarit, the relationship between the quality of the Support Network and Family functionality in patients with Parkinson's Disease is still unknown, for these reasons, the present study aims to evaluate the quality of the Support Network and Family Functionality in patients with Parkinson's Disease.

Material and Methods

Study Design and Population

A descriptive cross-sectional study was carried out in Nayarit, Mexico between January to June 2022. The research was developed at the regional general zone with Family Medicine #10 of the Instituto Mexicano del Seguro Social (IMSS), a primary/secondary level hospital. The inclusion criteria were valid beneficiaries, with diagnosis of Parkinson's disease, who agreed to participate in the study with informed consent.

Variables

The following variables were measured in patients who met the inclusion criteria: age, sex, marital status, education, economic income, family functionality and support network. The collection of variables was as following: age in years; sex, according to phenotypical characteristics; marital status, direct question about a partner and the relationship; education, asking about the level of education; economical income, money earned by the family in a month; family functionality, applying the FF-SIL test; and support network with the Gijon Test. The information obtained was attached to the standardized data collection form.

Statistical Analysis

Once the information was collected, the analysis was carried out using the SPSS version 25. Descriptive statistics were used, the qualitative variables were expressed as frequencies and percentages, and the quantitative variables as measures of central tendency and dispersion. For the bivariate analysis we used the odds ratio and Fisher test.

Ethics

The study was approved by the Local Committee for Ethics and Health Research number 204, with registration number R-2021-18028-014. The research was conducted under the General Health Law on Health Research, the Declaration of Helsinki and bioethical principles.

Results

27 patients with a main diagnosis of Parkinson's disease were evaluated, who met the inclusion criteria for this study, 16 participants (59%) are men and 11(41%) are women. Most of the participants were over 65 years old (82%), with a mean age of 74.5 years. The minimum was 48 years and the maximum age was 93 years. Regarding the marital status variable, 17 are married (63%), 9 widowed (33%), and only one is single (4%). According to the distribution of the education variable, the frequency of no degree of study was 3 participants (11%), elementary school with 8 (30%), middle school with 9 (33%), high school with 4 (14%), technical career with 2 (7%), professional only one (4%) (Table 1).

We also found that the distribution of the most frequent socioeconomic level variable is the middle class with 12 patients (44%), followed by the lower class with 8 (30%). Regarding the economic income variable, we found that there is a Mode of 13 participants (48.1%) who receive more than 7 minimum wages per day and only 8 study subjects (29.6%) who receive between 1 - 2 minimum wages per day, this means that most of them receive some type of employment pension or government support. We obtained a result of 21 patients (78%) with a moderately functional family, 4 with a dysfunctional family (15%) and 2 (7%) with a functional family. On the other hand, the frequency of percentages obtained with the Gijón Scale was as follows: 15 (56%) with Good/Acceptable social situation and 12 (44%) with social risk (Table 2).

In the bivariate analysis between the factors that are associated with a good or acceptable support network, we found the following results: family functionality (dysfunctional) RM 4.6(0.4-52.1), p 0.18; partner (yes) RM 5.6(1.1-30.9), p 0.04; education (basic) RM 2.5(0.3-16.0), p 0.32; income in minimum wages (1-3 salaries) RM 0.01(0.001-0.1), p<0.001; socioeconomic level (low) OR 0.1(0.02-0.8), p 0.02; age (over 75) OR 2.2(0.4-11.0), p 0.29; sex (man) OR 0.5 (0.1-2.3), p 0.38. With the above, we found an association between the variables of income in minimum wages of 1-3 (protective factor), low socioeconomic level (protective factor) and not having a partner (risk factor) with the social support network (Table 3). The rest of the variables were not significant. The association between family functionality and social support network was not significant.

Table 1: Baseline characteristics of participants.

Characteristic (n= 27)	n(%)
Age	
Less than 75 years	9(2)
More than 75 years	90(20)
Sex	
Man	16(59)
Woman	11(41)
Marital status	
Married	17(63)
Widowed	9(33)
Single	1(4)
Education	
No education	3(11)
Elementary	8(30)
Middle	9(33)
High school	4(15)
Technical	2(7)
Professional	1(4)

Table 2: Baseline characteristics of participants(part 2).

Characteristic (n= 27)	n(%)
Income(minimum wage)	
Less than de 1	2(7)
1-2	8(30)
3-4	4(15)
5 o more	13(48)
Socioeconomic level	
Upper middle class	1(4)
Middle class	12(44)
Lower middle class	3(11)
Low class	8(30)
Very low class	3(11)
Family functionality(FF-SIL)	
Functional	2(7)
Moderately functional	21(78)
Dysfunctional	4(15)
Gijón test	
Good – acceptable	15(56)
Social risk	12(44)

N: Frequency; %: Percentage

Table 3: Characteristics associated with the social support network.

Characteristic	Social support network Risk (n=12)	Good (n=15)	OR (95% CI)	*p*
Family functionality				
Dysfunctional	3(25)	1(7)	4.6(0.4-52.1)	0.18
Functional	9(75)	14(93)		
Partner				
No	7(58)	3(20)	5.6(1.1-30.9)	0.04
Yes	5(42)	12(80)		
Education				
Basic	10(83)	10(67)	2.5(0.3-16)	0.32
Middle - high	2(17)	5(33)		
Income(minimum wage)				
1-3	1(8)	13(87)	0.01(0.001-0.1)	0.001
4-5	11(92)	2(13)		
Socioeconomic level				
Low	2(17)	9(60)	0.1(0.02-0.8)	0.02
Middle - high	10(83)	6(40)		
Age				
More than 75	8(67)	7(47)	2.2(0.4-11)	0.29
Less than 75	4(33)	8(53)		
Sex				
Man	6(50)	10(67)	0.5(0.1-2.3)	0.38
Woman	6(50)	5(33)		

OR: Odds Ratio; 95% CI: Confidence Interval; p: Fisher Test

Discussion

The most frequent age of Parkinson's disease is over 65 years of age (81.5%), similar to what was reported by Melendez-Flores et al., where they talk about the population with the age of onset of symptoms, with an average of 70.5 years, since it is due to changes that occur in the nervous system during aging, such as macroscopic morphological changes, weight loss of the brain (10% between 20 and 90 years), volume loss (cerebral atrophy) as well as the increase in the size of the ventricles. In addition, there are microscopic tissue changes, an irreversible loss of neurons, as well as a decrease in Purkinje cells in the cerebellar cortex [5].

The latest epidemiological study carried out in Spain, carried out by Seijo-Martínez et al., showed prevalence figures for parkinsonism in people over 65 years of age of 5,440 per 100,000 inhabitants, and for Parkinson's disease, 1,990 per 100,000 population [4]. According to Arroyo et al., this late appearance of symptoms is related, since they mention that it is difficult to diagnose the disease in its initial phases. In their study, it was detected that 24% of the patients were captured in a mild phase, 25% in a moderate phase, 22% in an advanced phase and 24% in a very advanced phase [2].

Eluvathingol et al., insist on the difficulty of diagnosing this disease in its initial phases, because it is easy to confuse it with the first symptoms of old age, so diagnoses in its initial phases are fewer. Offering an early diagnosis can influence the ability of the patient and their family to accept the disease [3]. In a meta-analysis carried out in 2004, it was concluded that there was a relative risk of suffering from Parkinson's disease of 1.5 times greater in men than in women. This pattern could be a reflection of genetic alterations linked to the X chromosome or to factors related to sex hormones, mainly testosterone, mentioning that women have neuroprotection with Estrogens [6].

According to Hagell et al., the annual direct healthcare cost per patient with Parkinson's disease is USD $2,900 ($59,030.92 Mexican pesos per year) [7]. In our study, we found that 48.1% of patients receive >7 minimum wages per day and only 29.6% receive between 1-2 minimum wages per day, this could be explained by the labor pension or government support here in Mexico. At present in Mexico, according to the Support Program for the Elderly of the Federal Government, "Well-being Program", the Elderly receives a bimonthly pension support of $7,700 pesos, this means that they receive $3,850 Mexican pesos monthly to comply with your needs.

The EDAD survey served as the basis for quantifying the main dependency problems associated with Parkinson's disease and defining the degree of difficulty in performing certain tasks of daily life. A total sample of 755 individuals was obtained. The contribution of this work to the topic is an update on the situation of Parkinson's patients and their families, as well as the quantification of relevant aspects of the disease, both from a sociological and epidemiological point of view, which allows us to learn about the situation of patients and caregivers throughout the different stages of the disease [8].

Finally, as a result of this study, we found a 55.6% Good/Acceptable social situation, which means that Parkinson's patients have an adequate support network. According to León et al., caregivers, family and social circles must be informed about the context of the disease itself, as well as all the additional tools that exist to support both their quality of life and their needs. basics, from the structure of the house to the type of food they consume, which means an improvement in their activities of daily living and a better evolution of their disease [9]. This is the first study to assess the quality of the support network and Family Functionality in patients with Parkinson's Disease using these scales in Nayarit. It is transcendental to share these results, seeking to encourage our colleagues, especially family doctors, to replicate and improve this type of study.

Conclusions

Parkinson's disease is difficult to detect in its early stages, even if it is confused with symptoms associated with human aging. Although there is no relationship between the support network of caregivers or relatives, with respect to Family Function, according to this study; These may be risk factors for presenting some type of load. Standardize the functionality of the family, with this to be able to facilitate the patient's coping against the disease, an effectiveness of intervention by the health professional will support a slowing down of the progression of the disease, as well as possible risks and complications. It is important to define that each family, are biopsychosocial units, are in constant transformation, and that most medical problems originate there. Family Physicians are specialists in people and not in diseases, we try to manage our patients focusing on the person, on their environment and that in order to cure we need to care and part of our professional training is to understand the Philosophy of Care, the objective of the care we give to patients is based on advance, comprehensive and continuous care.

Fulfilling the requirements to provide adequate support in the health-disease process: being directly related to the index case or the "sick" person that is, "being unconditional", having bioethical principles in health respecting autonomy and justice, always listening actively and to be able to listen in this way, to know ourselves. Finally, “Cuidadosofia”, is a term that is not well defined at present, so much so that there is no universal, clear definition of this current, the challenge of Doctors Today will be to promote this “Cuidadosofia” always looking behind the health process. -disease and the challenge of the Physicians of the Future will undoubtedly be to lay the foundations of this Philosophical current to follow it as the adequate unconditional support of the caregiver towards the patient, like light in the shade, like water in sodium.

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