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Assessment of Awareness and Quality of Life for Patients with Parkinson's Disease

Enas Hassan Ahmed (1), Hanan Ibrahim Ahmed (2), Ferial Fouad Melika(3)
1)M.S.N., Community Health Nursing, Head of Technical Nursing Institution, EL-Salam Specialized Hospital, 2)Professor of Family &Community Health Nursing Faculty of Nursing Ain Shams University, 3)Professor of Family &Community Health Nursing Faculty of Nursing Ain Shams University.

Abstract

Background: Patients with Parkinson's disease have a progressive loss of function, which has an impact on the quality of life of patients. **This study aims to assess** awareness and quality of life for patients with Parkinson's disease. **Study Design:** A descriptive research design was employed to achieve the study's objectives. **Setting:** The study was conducted in two settings, the outpatient neurology clinics at Martyr Ahmed Shawky Hospital for Geriatrics in Demerdash and at EL Demerdash Hospital. **Subjects:** A purposive sample consisted of 104 male or female patients aged over 40 and diagnosed with Parkinson's disease. **Tools:** Two tools were used for data collection. This tool consisted of three parts: part one, Socio-demographic characteristics; part two, to assess the effect of Parkinson's disease on patients' awareness, and part three, Self-care practices of patients with Parkinson's disease. **Tool II:** to assess the effect of Parkinson's disease on patients' quality of life. **Results:** The study results showed that about half of patients with Parkinson's' disease were male, third of them were aged between 55 and 60 years, and second tool the most of the studied patients had unsatisfactory knowledge about Parkinson's disease, while more than one third of them had a poor level of total reported practices toward self-care. which led to about two-thirds of patients with Parkinson's disease having a poor level of total quality of life, while few of them had a good level. **Conclusion:** There was a highly significant relationship between total quality of life and patients' knowledge related to Parkinson's disease, and while there was a highly significant relation between total quality of life and total reported patients' practices related to self-care, **Recommendation:** Health educational programs for patients with Parkinson's disease should be conducted at outpatient clinics to raise their awareness of Parkinson's disease.

Keywords: Parkinson's disease, Awareness, Quality of Life.

Introduction

Our understanding of Parkinson's disease (PD) has evolved tremendously over the past 200 years, when it was initially described by James Parkinson, based on clinical observations. However, the disease was initially cataloged as a movement/motor disorder ***(Eman et al. 2023).***

From causes of PD- Though it is known that Parkinson's disease is caused by the death of dopamine-secreting neurons in the brain, the exact cause of this damage is still unknown. It is believed that environment and genetics play a role, and certain medications, toxins, and other diseases can produce symptoms similar to

Parkinson's disease, and then it is known as secondary Parkinsonism. ***(Jams et al., 2023)***

Vary from person to person. Early signs are mild and go unnoticed. Symptoms often begin on one side of the body and usually get worse on the same side, even after symptoms begin to affect both sides such as tremors, trembling of hands, arms, legs, jaw, and face so on stiffness of the arms, legs, and trunk, slowness of movement and speech difficulty the prolonged period leads to

Depression and speech dysfunction, urinary incontinence, sleep problems, swallowing difficulty, and Sexual dysfunction ***(Nicholas et al., 2023).***

Quality of life (QOL) is a multi-dimensional concept that reflects a subjective evaluation of a person's satisfaction with life and concerns, among others, the relationships with family or relatives, a person's health, the health of another close person, finances, housing, independence, religion, social life, and leisure activities ***(Farquhar et al., 2021).***

Community health nurse (CHN) in the field of improving the quality of life for patients with Parkinson's disease not only focuses on the physical aspects but mainly seeks to support patients' return to as normal a life as possible, cope with daily activities, use of resources, and social support. Quality of life is frequently used in nursing as an indicator of user satisfaction with nursing interventions for diseases ***(Zhang and Chan, 2021).***

Significance of the study

The prevalence of PD has doubled in the past 25 years. Global estimates in 2019 showed over 8.5 million individuals with PD. Current estimates suggest that, in 2019, PD resulted in 5.8 million disability-adjusted life years (DALYs), an increase of 81% since 2000, and caused 329,000 deaths, an increase of over 100% since 2000 ***(WHO, 2023).***

Aim Of The Study

The study aimed to assess the awareness and quality of life of patients with Parkinson's disease, through:

1- Assessing patients' knowledge regarding Parkinson's disease.

2- Assessing patients' reported practices toward self-care for Parkinson's disease.

3- Assessing the quality of life of patients with Parkinson's disease.

Research Questions:

- What is the total knowledge of patients with Parkinson's disease?
- What is the total practice for patients with Parkinson's disease?
- Is there a relation between the total knowledge of patients with Parkinson's disease and their quality of life?
- Is there a relation between the total reported practices of patients with Parkinson's disease and their quality of life?

SUBJECTS AND METHODS

This study was conducted under the following four main designs as the following:

I- Technical Design

II-Operational Design

III-Administrative Design

IV-Statistical Design

I- Technical Design:

Research Design for this study included a description of the research design, setting, subjects, and tools of data collection.

Research setting:

The study was conducted in 2 settings: the outpatient neurology clinic at the Martyr Ahmed Shawky Hospital for Geriatrics in Demerdash and the outpatient neurology clinic at EL Demerdash Hospital.

Sampling:

A purposive sample was used in this study within the following inclusive criteria:

- Age over 40 years.
- Male and female.
- Confirmed diagnosis of Parkinson's disease.
- Patients with Parkinson's disease with or without other medical problems.

The sample size was composed of 104 patients with PD who were utilized to conduct this study in the previously mentioned setting, and the sample size was calculated by using the sample size equation ***(Rosner, 2016).***

Tools for data collection:

Two tools of this study were designed after reading related literature and taking experts' opinions; it was written in the Arabic language.

First Tool: An interviewing questionnaire: It was written in simple Arabic and consisted of the following five parts.

✓ **Part I**: This part was concerned with socio-demographic characteristics of the study sample of patients with Parkinson's disease, which consisted of 9 questions as gender, age, educational level, social status, occupation, monthly income, and residence place.

✓ **Part II:** This part assesses patients' knowledge regarding Parkinson's disease. It consists of 9 closed-ended questions and includes: the meaning of Parkinson's disease, its causes, predisposing factors, signs & symptoms, complications of the disease, diagnostic measures, stages of the disease, and its treatment.

Scoring system for knowledge of Parkinson's patients:

Each correct answer was given one point score answer, the whole 9 knowledge questions had 61 points. So, the total score equals 122 grades. These scores were summed up and converted into a percentage score. Then it was classified into two categories according to the following:

- Satisfactory knowledge = ≥ 60%.

-Unsatisfactory knowledge = < 60%.

✓ **Part III:** This part is to assess the reported practices of patients with Parkinson's disease. This tool was adapted from ***Welsh et al., (2018)*** and modified by researchers.

Scoring system of reported practices of Parkinson's patients:

This questionnaire consisted of 50 closed-ended questions and included 57 statements measured by a Likert scale for three levels. The scores of this questionnaire were: (3) if answered "always," (2) if answered "sometimes," and (1) if answered "never.". The total score on the practice scale was 171 grades. All items' scores were summed up and converted into a percentage, which was classified into two categories according to the following:

✓ Poor = < 50%

✓ Average = ≥ 50: <75%

✓ Good = ≥ 75.

Second Tool: The QoL of Parkinson's Disease Questionnaire (PDQ-39):

This tool was constructed to assess Parkinson's disease on patients' quality of life, which was adapted and modified from ***Peto et al. (1998).*** It covered the following 8 dimensions such as.

1- Mobility: it consists of 10 items.

2- Daily living activities: 6 items.

3- Emotional condition: 6 items.

4- Stigma from disease: 4 items.

5- Social support: 3 items.

6- Cognitive condition: 4 items.

7-Communication: 3 items.

8-Bodily discomfort: 3 items.

Each question has 3 levels of answers: Always =3- Sometimes =2 - Never = 1

Scoring of QOL of Parkinson's patients:

The total score on the quality-of-life scale ranged from 39 to 117 grades. All items' scores were summed up and converted into a percentage, which was classified into two categories according to the following:

✓ Poor < 50%

✓ Average ≥ 50: < 75%.

✓ Good ≥ 75.

II- Operational Design:

The Operational design included the preparatory phase, validity, reliability, ethical considerations, pilot study, and fieldwork.

Preparatory phase

A literature review was done regarding current and past available literature, covering the various aspects of the problem, using textbooks, articles, magazines, and internet sites through Research Gate.

Content validity:

To achieve the criteria of trustworthiness of the tool of data collection in this study. It was tested and evaluated for face and content validity by three expertise professors of family and community health nursing department in Faculty of nursing, affiliated to Ain Shams university. The experts reviewed the tools for clarity, relevance, comprehensiveness, simplicity, and applicability; minor modifications were made, and the final forms were developed.

Reliability of tool:

The developed tool was tested for reliability on all of each part. The reliability process was assessed by measuring their internal consistency by using the Cronbach alpha coefficients. it was including the following:

Items	Cronbach's alpha coefficients
Questionnaire about Knowledge	0.810
Questionnaire about Practices	0.870
QoL scale	0.70.

Pilot study:

A pilot study was conducted at the beginning of the study for 11 cases which represents 10% of the total sample, to test the feasibility, applicability of tools, content, clarity of included questions, and simplicity. It took about one month from the beginning of April 2023, the time needed to fill out the tool was 15-20 minutes, and the appropriate modification was made so that subjects included in the pilot study were excluded from the actual study sample.

Field Work:

The actual process of data collection was carried out in three months consequently the period from the beginning of May 2023 until the end of July 2023, two days per week (Saturday & Tuesday) nearly about 5 hours daily from 8 am to 1 pm in order to collect the total sample of 104 of patients with Parkinson's disease. The researchers were seeing 4-5 patients per day and the maximum time needed to fill out the tool was 30 -35 minutes for every patient. The researchers introduced themselves to the previously mentioned setting directors, nurse supervisors, and the other health team workers and also explained the aim of the study to all of them.

III- Administration Design:

A formal letter from the Dean of the Faculty of Nursing, Ain Shams University, undersecretary of the Ministry of Health directed to the general director of the outpatient clinic, and director of Martyr Ahmed Shawky Hospital for Geriatrics and EL Demerdash Hospital affiliated with Ain Shams University to get permission and help for data collection.

Ethical Considerations:

The ethics code of this study was obtained by the Ethics Committee of the Faculty of Nursing, Ain Shams University, after submitting a proposal for the research and examining all papers by the concerned committee, and **the ethics code was (24.04.260)**. Then the purpose and nature of the study were explained to the participants, and formal consent and voice notes through What's Up for Illiterate Patients were taken, and informed that each study subject is free to withdraw at any time from the study without giving any reasons.

IV- Statistical Design:

Data collected from the studied sample was analyzed and tabulated using the Statistical Package for Social Science (SPSS) version 20. Qualitative data was presented as numbers and percentages. The statistical tests used the chi-square test, means, slandered deviation, and Correlation test, which showed good internal consistency and construct validity.

Results:

Table (1) reveals that 55.8% of patients with Parkinson’s disease were male and 32.7% of them age aged between 55 ≤ 60 years, with a Mean ± SD of 54.85 ±5.834, while 9.6% were highly educated and 66.3% were widows/widowers. Also, 39.4% of the studied sample did not work, which led to their family income not being enough for 62.5%. In addition70.2% of them lived in urban areas, and 75% lived in crowded homes

Table 2 displays that 70% of patients with Parkinson’s disease did not know the Signs and symptoms of Parkinson's disease.

Table 3 presents that 61.5% of patients with Parkinson’s disease did not know the complications of Parkinson's disease related to the digestive system.

Figure 1 illustrates that there was 94.2% of the studied patients had unsatisfactory knowledge about Parkinson’s disease.

Figure 2 proves that 37.5% of patients with Parkinson’s’ disease had poor levels of total reported practices.

Figure 3 regarding QOL this figure illustrates that 59.6% of patients with Parkinson’s’ disease had a poor level of total QOL while 3.8% of them had a good level.

Table 4 demonstrates that there was 57.7% of patients with Parkinson’s disease had unsatisfactory knowledge were poor QOL levels with a significant relation between total QOL and patients’ knowledge related to Parkinson’s disease with $\chi2 = 120.604$ and p-value < 0.001.

Table 5 demonstrates that there was 28.8% of patients with Parkinson’s disease had poor levels of practice had poor QOL levels. There was a highly significant relation between total QOL and patients’ practices related to self-care, with $\chi2 = 81.696$ and p-value < 0.001.

Table (1): Distribution of the studied sample of patients with Parkinson’s disease according to their socio-demographic characteristics (n=104).

Socio-demographic characteristics		No	%
Gender	Male	58	55.8
	Female	46	44.2
Age	45 ≤ 50	20	19.2
	50 ≤ 55	28	26.9
	55 ≤ 60	34	32.7
	60 +	22	21.2
	Mean ± SD	54.85	5.834
Level of Education	Not reads or writes	30	28.8
	Reads and writes	33	32.8
	Intermediate education	30	28.8
	Higher education	10	9.6
Social status	Single	0	0.0
	Married	16	15.4
	Divorced	19	18.3
	Widow/Widower	69	66.3
Occupation	Employee	40	38.5
	Freelancer	6	5.8
	Does not work	41	39.4
	Retired	17	16.3
Family monthly income	Not Enough	65	62.5
	Enough	25	24.0
	Enough and save	14	13.5
Residence	Urban	73	70.2
	Rural	29	27.9
	Slum areas	2	1.9
Home crowding Index	Uncrowded (<1)	26	25.0
	Crowded (1-2)	78	75.0

Table (2): Distribution of the studied sample of patients with Parkinson's disease according to their knowledge regarding signs and symptoms of Parkinson's disease (n=104).

Items		
Signs and symptoms of Parkinson's disease	No	%
Tremors in the hand, arm, jaw, and face	26	25.0
Rigidity or stiffness of the limbs or part of the body	10	9.6
Slowness of movement	8	7.7
Loss of balance while standing	18	17.3
Unstable posture or walking gait	12	11.5
Unusually soft speaking voice (hypophonia).	6	5.8
Trouble swallowing (dysphagia)	6	5.8
Dementia	10	9.6
Eye problems (Blinking less often than usual.	2	1.9
Don't know.	70	67.3

**P = (significant), **P= (highly significant)*

Table (3): Distribution of the studied sample of patients with Parkinson's disease according to their knowledge regarding the complications of Parkinson's disease (n=104).

Items		
The complications of Parkinson's disease	**No**	**%**
Digestive System		
Vomiting	4	3.8
Diarrhea	0	0.0
Constipation	10	9.6
Indigestion	20	19.2
Don't know	76	73.1
Motor system		
Tremor	36	34.6
Imbalance while walking	28	26.9
Involuntary movement	4	3.8
Stiffness of one limb	2	1.9
Don't know	58	55.8
Nervous system		
Loss of memory	16	15.4
Convulsion	4	3.8
Sleep disturbance	18	17.3
Don't know	72	69.2
Urinary system		
Incontinence	4	3.8
Dysuria	2	1.9
Urgency, frequency, nocturia	22	21.2
Don't know	72	69.2
Reproductive system		
Sexual dysfunction	24	23.1
Loss of sexual desire	14	13.5
Don't know	64	61.5

****P = (significant), **P= (highly significant)***

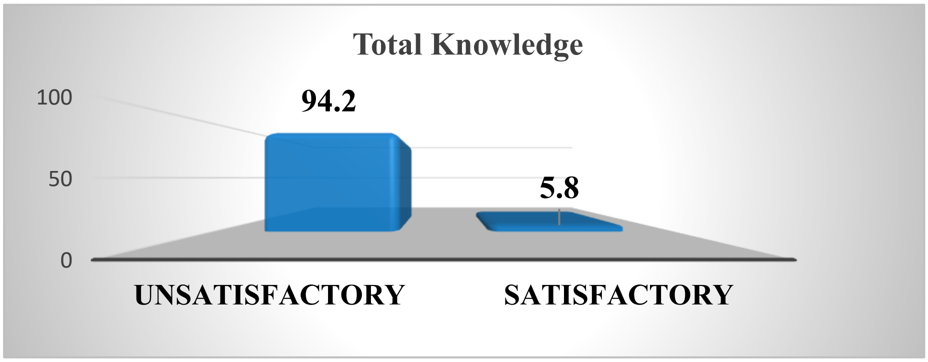

Figure (1): Distribution of the total knowledge of studied sample of patients with Parkinson's disease (n=104).

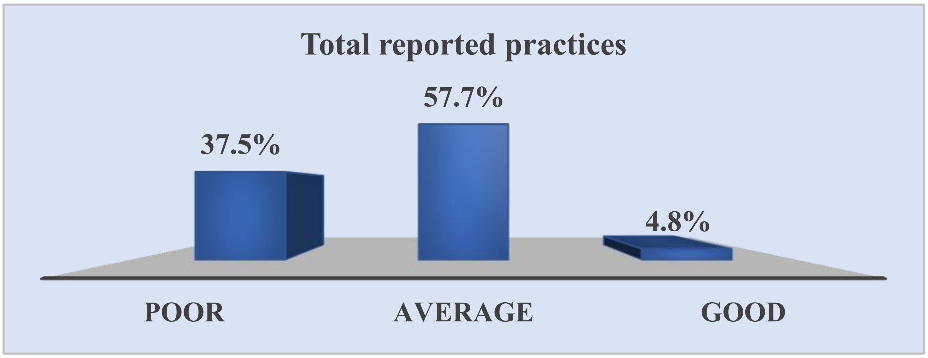

Figure (2): Distribution of the total reported practices of a studied sample of patients with Parkinson's disease (n=104).

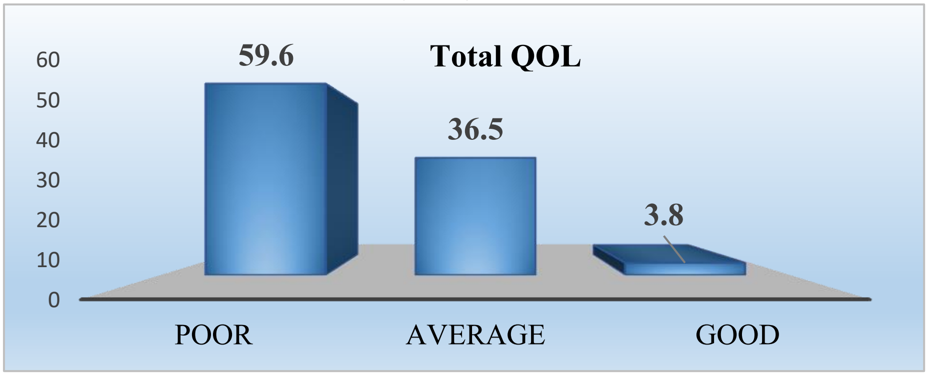

Figure (3): Distribution of the studied sample of patients with Parkinson's disease according to their total quality-of-life domains (n=104).

Table (4): Relation between the total knowledge among studied patients with Parkinson's disease and their total QOL (n=104).

Total Knowledge regarding Parkinson's' disease	Total QOL			Statistical Test	
	Poor (62)	Average (38)	Good (4)	(χ2)	P value
Satisfactory knowledge	2 1.9%	3 2.9%	1 1.0%	120.604	0.000**
Unsatisfactory knowledge	60 57.7%	35 33.7	3 2.9%		

Table (5): Relation between the total reported practices of self-care among studied patients with Parkinson's disease and their total QOL (n=104).

Practices of self-care	QOL			Statistical test (Chi-square test	
	Poor	Average	Good	χ^2	P value
Poor level	30	8	1	81.696.	0.000**
	28.8	7.7	1.0		
Average level	29	30	1		
	27.9	28.8	1.0		
Good level	1	2	2		
	1.0	1.9	1.9		

Discussion

Parkinson's disease is a major cause of disability among the elderly. Parkinson's disease is currently the second most common neurological degenerative disorder after Alzheimer's disease, affecting an estimated more than 4 million individuals over the age of 50 worldwide, a number expected to double by the year 2030. Individuals under 40 years of age may develop PD, this is called young-onset Parkinson's disease. Healthcare professionals are encouraged to consider PD in every patient, regardless the age, presenting with motor and non-motor symptoms of the disease.

According to the study the socio-demographic characteristics of the studied patients. The current study revealed that more than half of the studied sample was male, slightly less than one-third of them age was 55: < 60 years with mean age (54.85 ± 5.8), slightly less than one-third were capable of reading and writing, almost two-thirds of the studied sample were widow, less than two- fifths were employer, as well less than two-thirds of them had insufficient monthly income with more than two thirds from urban areas. While three-quarters of them were living in crowded homes **(Table 1).**

This result is in agreement with the sample of the study, consisting of 46.2% females and 63.8% males, conducted by ***Makoto et al. (2015).*** Who studies that maintaining a high quality of life is crucial for the rehabilitation of patients with Parkinson's disease, in Japan?

While ***Ahmed et al. (2019)*** studied the evaluation and follow–up of patients diagnosed with PD illness the was the mean age of 62.1 of the patients were male.

In contrast, ***Catharina & Henry, (2018)*** who studied sex differences in the clinical Progression of Parkinson's disease in the Faculty of Health Science, Kristianstad University, Kristianstad, Sweden, found that the age of the study clients ranged from 65-80 years mean age of study was 63.8 years. Mean age of females and males is 77.3 years and 68.2 years, respectively.

Also, the study presented patient education; this study's findings clarified that more than two-thirds of patients with Parkinson's disease have readers & writers education, which might be a disability for gaining knowledge about PD. This finding was confirmed by ***Cohen & Wills (2020)*** in a survey conducted in the USA, which stated that Parkinsonism patients with a higher educational level had better cognitive function. Low education was associated with an increased risk for hallucinations and a trend for more depression, delusions, and sleep disturbances.

In contrast, ***Burgener & Twigg (2019) and Larsen et al. (2021)*** **studied** how to study residence place in rural India. This study clarified that more than three-quarters of older adults with PD are present in the inner city and more rural populations.

According to the previous study social status of the patients with Parkinson's disease, more than half were widows, and more than a third of patients were without work. However, more than half of patients with Parkinson's disease do not have enough income.

This finding agrees with ***Kurland, (2020)*** in a study conducted in the UK who stated that patients with Parkinson's disease which not married, and have low social and economic conditions which leads to the effect of health status whether can't follow health centers or physiotherapy centers.

From the researcher's point of view: this difference may be due to the inclusion criteria of the studied sample or may be due to the difference in cultures between the studied samples.

Part (2): Assess patients' knowledge regarding Parkinson's disease

The study proved that more than half of the studied sample of patients with Parkinson's disease did not know the signs and symptoms of Parkinson's disease. (**Table 2**).

This study agrees with the knowledge of Parkinson's disease about symptoms and signs ***(Patrik and William, 2019).*** How and why does Parkinson's disease affect women and men differently? *At USA* showed that women and men had distinctive motor and non-motor symptoms as their PD progressed. Motor symptoms emerge later in women: tremor is a common first presenting symptom associated with recurrent falls and more severe pain syndromes with specific characteristics such as reduced rigidity, a higher propensity to develop postural instability, and elevated risk for levodopa-related motor complications. Conversely, male PD patients showed more serious postural problems and had worse general cognitive abilities: freezing of gait – the most disabling motor complication of PD – develops later in men; men had a higher risk of developing camptocormia (abnormal severe forward flexion of the trunk when standing or walking). An ongoing clinical trial is evaluating the prevalence of PD and the biological sex impact on other postural abnormalities, such as Pisa syndrome (a reversible lateral bending of the trunk with a tendency to lean to one side), ante Collis (dystonia of the neck resulting in excessive forward flexion), scoliosis (a sideways curvature of the spine), and deformities related to hands and/or toes.

In the same line, ***Tan et al. (2019),*** who studied the knowledge of Parkinson's disease in a multiethnic Urban Asian setting, reported that the main symptom of Parkinson's disease was tremors; 61% had shaking hands. In the same line, Editorial and Creative Services, ***Parkinson's (2016)*** in the UK, 215 Vauxhall Bridge Road, in London, found that the main symptoms were 55% of patients with PD. Tremor is very common in Parkinson's. It affects about 80% of people with Parkinson's.

In contrast to ***Tjeerdsma et al. (2019).*** Those who study the voluntary suppression of defecation delays gastric emptying have found that 40% to 50% had constipation regarding non-motor symptoms in patients with Parkinson's disease according to the digestive system.

The current study indicated that less than one-third had constipation of patients according to their knowledge of Parkinson's disease complications regarding motor symptoms On the opposite line, ***Essa & Hamdy, (2016)*** evaluated the scope of gastro-intestinal symptoms of Parkinson's disease in Egypt's faculty of medicine, Cairo University who studies that evaluating the scope of gastrointestinal symptoms of Parkinson's disease reported more than 80% of PD patients exhibit prolonged colonic transit time, and the same is probably true for de novo PD patients.

In contrast with these results, ***Gjerstad (2018)*** in who study the occurrence and clinical correlates of rapid eye movement (REM sleep) behavior disorder in patients with Parkinson's disease over time. Found that more than 50% of the patients reported irregular sleep regarding the nervous system.

Regarding patients' knowledge of Parkinson's disease about complications reproductive system, less than one-third of them had a loss of sexual desire. This study is in contrast with the study conducted by ***Basson (2015)*** in Canada, who studied women's sexual dysfunction and stated that 65.6% of patients with PD had a loss of libido was to decreased sexual desire.

In contrast with the study conducted by ***Patrik and William (2019),*** who stated that the sex-related behavior and functions were according to gender differences between women and men, strongly suggests the need for personalized (sex-related) therapy in PD.

The current study showed that less than one-third of patients with Parkinson's disease had the most common disease appearing in nerves **Table 3)**. The opposite line was conducted by ***Langston and Forno (2018),*** who studied the hypothalamus in Parkinson's disease. Stated that 61% have this disease in the nerve.

Part III: Assessing patients with Parkinson’s disease regarding reported self-care.

The present study proves that more than a third of patients with Parkinson’s disease had poor levels of total reported practices. the majority of them had a poor level of reported practice **Figure 2)**.

This result came in line with ***Tanner (2022),*** who studied knowledge, attitude, and practice assessment regarding Parkinson’s disease among patients attending an urban health center in South India and found that less than one-third of patients had a poor level of practice regarding prevention of Parkinson’s disease.

Regarding the distribution of a studied sample of patients with Parkinson’s disease according to their total quality-of-life domains, the results of the present study explained that a minority of the studied sample was at a good level in the study, and improved more than half with a highly statistically significant difference (**Figure 3).**

Regarding quality of life for patients with Parkinson's disease elimination our study illustrated that more than half of the patients with Parkinson’s disease had poor levels of total QOL, while more than one-third of them had a poor level of total reported practices toward self-care. This led to more than half of the patients with Parkinson’s disease having a poor level of total QOL, while a few of them had a good level.

In disagreement with ***Evatt et al. (2013),*** in England the patients with Parkinson’s disease 30% never, also were 29% sometimes, and 40% suffered from severe constipation, urinary incontinence, difficulty urinating, and frequent urination. Also, in the same line as our study, ***Clarke et al. (2018)*** who studied the referral criteria for therapy assessment of elimination caused by idiopathic Parkinson’s disease and quality of life stated that 37.3% were never suffering from severe constipation, urinary incontinence, difficulty urinating and frequent urination, 33.1% were sometimes and 26% were always according to the stage of Parkinson's disease.

Demonstrates that there was more than half of the patients with Parkinson’s disease had unsatisfactory knowledge, poor QOL levels, with a significant relation between total QOL and patients’ knowledge related to Parkinson’s disease. **Table (4).**

From the researchers’ point of view, this improvement in the knowledge of patients may be due to the positive effect of the intervention program.

Regarding signs and symptoms of Parkinson’s disease, the present study illustrated that one-quarter of their response were “tremors in the hand, arm, jaw, and face.”

This result disagreed with the study conducted by ***Kaddumukasa et al., (2015)*** entitled Knowledge and Attitudes of Parkinson’s Disease in Rural and Urban Mukono District, a cross-sectional community-based study in Uganda, sample size =377 and found that 72.4% of the study sample their response was “tremors in the hands”.

Demonstrates that there was less than half of the patients with Parkinson’s disease had poor levels of practice had poor QOL levels. There was a highly significant relation between total QOL and patients’ practices related to self-care. **Table (5).**

Concerning the practices of personal hygiene of patients with Parkinson’s disease, the results of the present study revealed that, less than two thirds always in need of encouragement to perform personal hygiene in the study, less than two-thirds were unable to groom and comb their hair, a quarter were always in need for help to take a shower in the study, and less than one third always getting dressed but with help of another person in these study with no statistical significance difference between intervention phase for all previous items **(Table 5).**

From the researcher's point of view, Falls and fear of falling are common and serious problems in people with Parkinson’s disease, they hurt self-efficacy, activity involvement, mobility, social participation, and quality of life.

Conclusion

Based on the results of the current study the following conclusion can be drawn: the study results showed that more than half of patients with Parkinson's disease was male, a third of them were aged between 55 and 60 years, and most of studied patients had unsatisfactory knowledge about Parkinson's disease, while more than one third of them had a poor level of total reported practices toward self-care. which led to than half of patients with Parkinson's disease having a poor level of total QOL, while of them had a good level. there was a significant relationship between total QOL and patients' knowledge related to Parkinson's disease, with $x^2 = 120.604$ and p-value < 0.001. while there was a highly significant relation between total QOL and total reported patients' practices related to self-care with $x^2 = 81.696$ and p-value < 0.001.

Recommendation

Based on the findings of the current study, the following recommendations can be suggested:

1.Health educational programs for Parkinson's patients in outpatient clinics should be conducted to raise their awareness regarding prevention, early detection, and proper self-care of the disease.

2. Design a simply illustrated booklet and posters in the Arabic language for patients, which describe the effect of the preventive measure on the management of Parkinson's disease.

3.Further research about intervention programs to improve the quality of life for patients with Parkinson's disease is recommended.

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