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PERCEPTION AND BARRIERS OF PARKINSON'S PATIENTS TOWARDS LOW TO HIGH EXERCISE

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Article Info

Abstract

Background: In 2024, the cause of neurodegeneration of this disease is still unclear. The factors of this disease may be genetic or environmental. Mainly the most of the cases of parkinsons are idiopathic, and around 5 to 10 percent of cases of parkinsons are familial. Parkinson's disease is a neurological disorder in which the brain can be involved that affects the muscle control and movement of the individual, and causes involuntary movements, stiffness, and slowness.

Objective: To determine the perception and barriers of parkinsons patients towards low to high exercises.

Methodology: A cross-sectional study was conducted from February 2025 to June 2025 in Karachi to determine the perception and barriers of parkinsons patients towards low to high-intensity exercises. The sample size was 377, and the non-probability purposive sampling technique was used. Data was evaluated by a questionnaire adopted from a prior study in which perception and barriers of Parkinson's patients in performing low and high exercises. The data was analyzed through SPSS version 23.0.

Result: A total of 377 parkinson's patients were included in this study. The response to the question related to the perception of exercises after implanting, they replied: 24.13% improved in low exercises and 28.11% improved in high exercises. The responses to questions about the effects on balance and fall risk than 53.31% responded that it improves from low exercises and 26.79% responded as it improved from high exercises. Regarding the barriers to exercise, around 11.40% participants had financial issues, and 10.34% participants had fall issues in low exercises.

Conclusion: The Perception of Parkinson's patients was good in implementing low exercises as compared to high exercises, and the main barriers are financial and the risk of falls.

Keywords:
Physical activity, Quality of life, Physical therapy, Gait, and Posture, etc.

INTRODUCTION

Parkinson's disease is a neurological disorder in which the brain is involved that affects the muscle control and movement of the individual and causes involuntary movements, stiffness, and slowness. This condition of an individual can worsen over a period. [1] When multiple motor functions are involved and it is collectively called Parkinsonism. The symptoms include tremors, difficulty in maintaining balance, bradykinesia, rigidity, and postural imbalance. [2] Some symptoms can develop in the human body by the time of progression of the diseases, like changes in behavioral patterns, sleep disturbances, mood swings, slurring of speech, and psychosis. [3] The term bradykinesia explains that they have difficulties in initiating the movement, planning, or executing the task. The term rigidity explains a stiff or resisted feeling in the muscles when stretching. The term postural instability leads to the impairment of balance, and then they have fall issues. The postural instability leads to the forward head stooped posture. [4]

In 2024, the cause of neurodegeneration of this disease is still unclear. The factors of this disease may be genetic or environmental. Mainly the most of the cases of parkinsons are idiopathic, and around 5 to 10 percent of cases of parkinsons are familial. [5] The diseases of parkinsons increase with age, and around 4% of individuals are diagnosed with parkinsons before the age of 60. Most men are more likely to have the chances of parkinsons as compared to women. [6] In the U.S, around 90 thousand individuals are diagnosed with Parkinsonism every year, and most people live with this disease in the U.S. [7]

The management of parkinsons disease can be done in both ways, like medicines and physical therapy. The medications can be given by the consultant because they can manage the dose of dopamine, and the physical therapists help to modify their lifestyles and enhance the quality of life of a patient. [8] The important part of the intervention related to Parkinson to motivate people to do the exercises because exercise can play a great role in managing the symptoms of this disease. [9] Most of the exercises, like strength training, posture guidelines, gait training, and balancing exercises, can be helpful for these patients and make them independent in performing the exercises, and improve the quality of life of the patient. [10] Physical therapy plays a major role in maintaining and provides the easiest way to improve the life of the patient. Physical therapy exercises and the modalities are helping these types of patients. [11] The aim of the study to evaluate the perception and barriers of Parkinson’s disease towards their low and high exercises.

METHODOLOGY

It was a cross-sectional study conducted among the Parkinson’s patients of Karachi. The data was collected from seven districts (south, north, east, west, Malir, central, and Korangi) of Karachi from Feb 2025 to July 2025. The sample size of 377 was calculated from Raosoft.com software. For the selection of the research participants for the study, the non-probability purposive sampling was used. The inclusion criteria of the study were both male and female Parkinson’s patients, the age group 60 to more than 70 years, and having the diagnosed with Parkinson’s disease for more than a year. The exclusion criteria consist of those Parkinson’s patients who were suffering from illness, cognitive impairment, or who were not willing to participate in the study. In this study, an adopted questionnaire was used in which demographic information of research participants, as well as questions related to the perception and barriers of Parkinson’s patients in performing low and high exercises. [12] According to the literature,

the meaning of low exercises is those that take less than three hours per week in performance, and those exercises that take more than or equal to three hours while performing are high. The analysis of data was done by SPSS version 23.0 software.

RESULT

A total of 377 participants were selected for the study who were already diagnosed with Parkinson's disease. The age of the participants, from 60 to more than 70 years old, male and female, were included, and the rest of the demographic data were shown in Table 1:

Table No.1: Demographics Data

S.No:	Variables	Frequency (%)
1.	Age	
	60-69	173 (45.88%)
	>70	204 (54.11%)
2.	Gender	
	Male	241 (63.92%)
	Female	136 (36.07%)
3.	Employment	
	Employed	129 (34.21%)
	Non-Employed	248 (65.78%)
4.	Living with	
	Live with family	159 (42.17%)
	Living alone	97 (25.72%)
	Live in old age home	121 (32.09%)
5.	Diagnosed	
	1-2 years	83 (22.01%)
	3-4 years	136 (36.07%)
	>5 years	158 (41.90%)
6.	Characteristics of Disease	
	Tremors	121 (32.09%)
	Gait/ Balance issues	98 (25.99%)
	Depression	66 (17.50%)
	Cognition issues	53 (14.05%)
	Lightheadedness	39 (10.34%)

We asked the research participants about the exercises that which type of exercise they performed to manage the symptoms of parkinson's disease which regarding low exercises, about 17.24% participants said to performed walking, and then 13.79% participants said they chose physical therapy interventions. In comparison of high exercises, about 7.95% responded that they chose physical therapy to reduce the symptoms of parkinsons disease, as shown in Figure No.1:

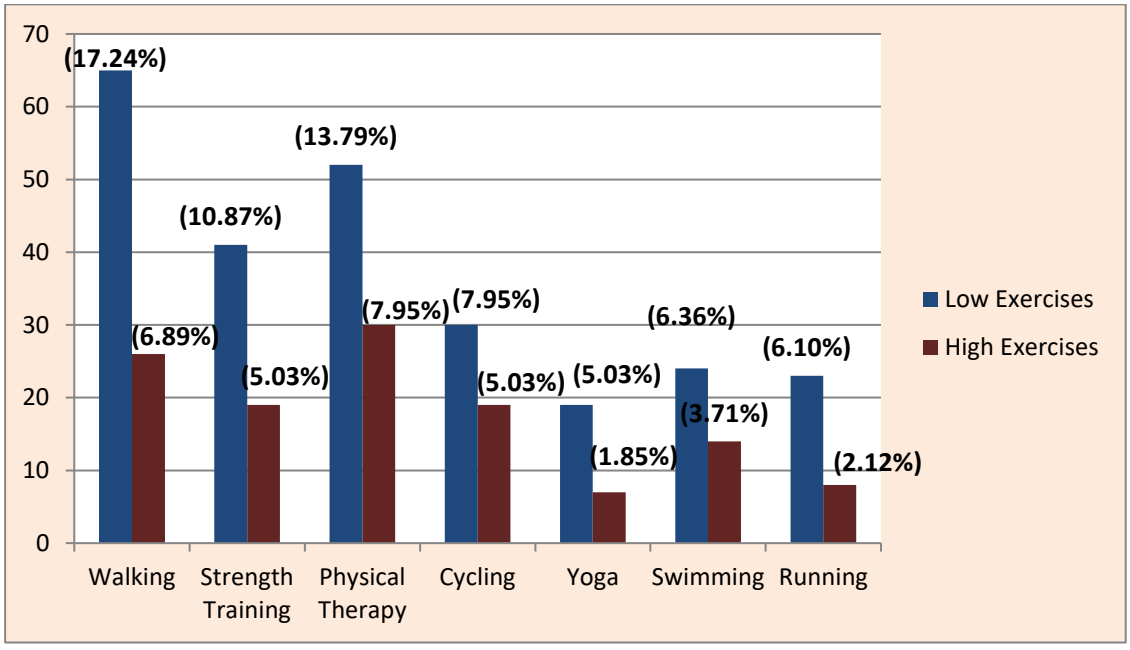

Figure No.1: Participants Performed the Exercises

When we asked the question to research participants regarding the perception of exercises, like they feel any variations regarding exercises when they were diagnosed with parkinsons they replied 24.13% improved in low exercises and 28.11% improved in high exercises.

When we asked the participants about the effect of bradykinesia, they said that 34.7% improved in low exercises and 31.83% improved in high exercises.

When we asked the research participants about the impact of tremors, they replied that 34.21% improvement in low exercise, and 28.91% of % persons reported improvement in high exercise.

When we asked the questions about the effects on balance and fall risk than 53.31% responded that it improved from low exercises, and 26.79% responded that it improved from high exercises.

The response to the question related to the memory and fatigue level of patients was that 39.25% responded that it improves from low exercises, and 36.87% responded that it improves from high exercises, as shown in Table No.2:

Table No.2: Perception of Exercises

Questions	Improves	Worse	No Change
Variation in exercises when diagnosed with PD. Low Exercise High Exercise	91 (24.13%) 106 (28.11%)	36 (9.54%) 64 (16.97%)	47 (12.46%) 33 (8.75%)
Effect of exercise on bradykinesia Low Exercise High Exercise	131 (34.7%) 120 (31.83%)	21 (5.57%) 30 (7.95%)	33 (8.75%) 42 (11.13%)
Effect of exercise on tremors Low Exercise High Exercise	129 (34.21%) 109 (28.91%)	26 (6.89%) 47 (12.46%)	29 (7.69%) 37 (9.81%)
Exercise effects on balance and fall risk in patients Low Exercise High Exercise	201 (53.31%) 101 (26.79%)	19 (5.03%) 13 (3.44%)	18 (4.77%) 25 (6.63%)
Effect of exercise on memory, fatigue Low Exercise High Exercise	148 (39.25%) 139 (36.87%)	27 (7.16%) 23 (6.10%)	11 (2.91%) 29 (7.69%)
Exercise effect on mood and sleep pattern Low Exercise High Exercise	113 (29.97%) 121 (32.09%)	39 (10.34%) 43 (11.40%)	25 (6.63%) 36 (9.54%)

When we asked to the participants regarding the barriers of exercises around 11.40% participants replied that they had financial issues and around 10.34% participants had fall issues in low exercises. On the other hand in high exercises around 16.18% participants said that they scared from doing the session of exercise and around 14.05% participants had falling issues while they were performing the exercises as shown in Figure No.2:

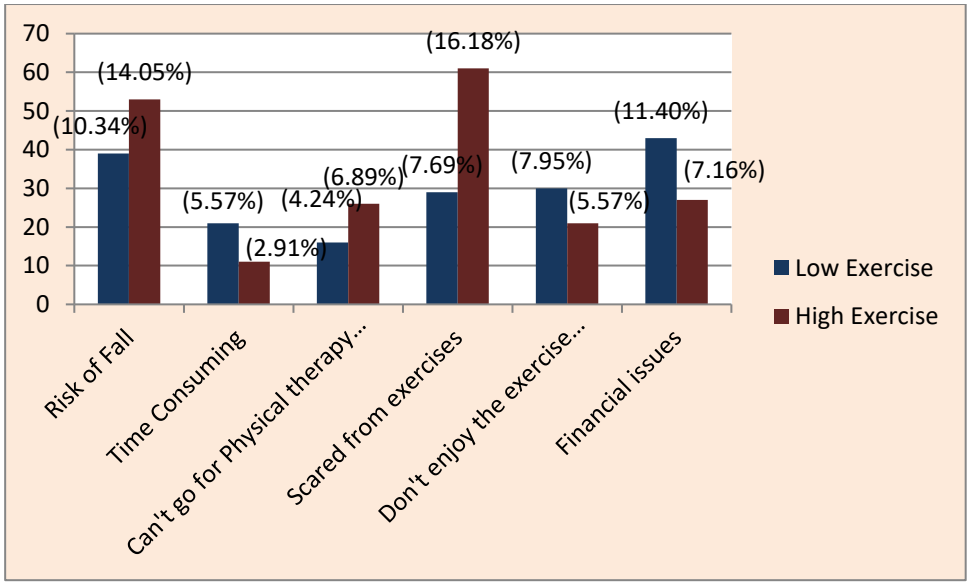

Figure No.2: Exercise Barriers

Discussion

Parkinson's is a progressive neurological disease that is progressive. Initially, it affects the kinetic movement of an affected person, and gradually it can affect the mental and physiological functions of the body. [13] It is characterized by motor and non-motor symptoms. Motor symptoms can cause instability of posture, slowness of movement, resting tremors, and rigidity. In non-motor symptoms, it can cause fatigue, sleep disorder, depression, and constipation, etc. [14] The main causes of Parkinson's disease are: lowering the level of dopamine, genetic mutation, and environmental exposures. [15] There is a difference in Parkinson's patients' thoughts regarding the performance of exercises daily. Some believe there is no role of exercise in Parkinson's disease, some others have specific barriers due to which they are unable to perform the exercises. [16] So, the perception and barriers of Parkinson's disease patients were evaluated by the researchers in the current study.

A study reported, Parkinson's disease is strongly related to the age factor, and the average age group found in their research was 60 years [17], as compared to our study found that the results as the research participants mostly belonged to the age groups more than 70 years, i.e., 54.11%. According to the gender, the research participants of our study were: 63.92% were male, while a study revealed, this disease was mostly found in males, and the main difference in symptoms among both genders as: tremors were common in females, and balance issue was found more in males. [18] Another study reported, Parkinson's disease is most commonly diagnosed at the age of 60 years, and 5 to 10 percent of patients were diagnosed before 50 years of age [19]. In comparison this around 41.90% of the research participants were diagnosed with Parkinson's disease for more than 5 years. According to the research, the commonest symptoms of Parkinson's disease are: tremors, bradykinesia, and rigidity, and these three are also called cardinal signs of this disease. [20] While in the present study, the most common symptom among the research participants was found to be gait and balance issues, i.e., 25.99%

The physical therapy interventions are beneficial for the treatment of Parkinson's patients, like focusing on the pattern of walking, postural maintenance, and exercises are some tools of physical therapy to help the patients. [21] In our study, the commonest use of intervention among the Parkinson's patients was walking about: 17.24% and physical therapy about: 13.79% They both have high percentages in low exercises as compared to high. Furthermore, the risk of falls due to the combined symptoms of motor and non-motor is common in these patients, which can increase the rate of injury and dependency among these patients. [22] So in our study, perception of the parkinson's patients regarding improvement in balance and reducing the risk of falls: 53.31% answered positively towards low exercises.

Fatigue is a symptom of parkinson's patients which affects almost half patients diagnosed with parkinson's disease [23] as compared to In our study, the level of fatigue and memory was also improved by the performance of low exercises according to the perception of the research participants about 39.25%. As this disease causes sleep disturbance as well as disruption of mood, which ultimately causes depression and anxiety [24], but the application of high exercise to improve the mood and sleep patterns of patients was found to be effective in 32.09% of the research participants of our study. According to the research, exercise plays a vital role in managing patients with parkinson's disease, but some barriers affect the participation of patients in performing the exercises. [25] The barriers of our study participants were the risk of falls, about 14.05% and being scared of exercises, about 16.18%.

Conclusion

From the present study, it is concluded that the Perception of Parkinson's patients was good in implementing low exercises as compared to high exercises, and the main barriers are financial and risk of falls. The barrier of finance can be reduced by taking consultation from the non-profit organizations, and the barrier of fall risk can be overcome by the proper education of patients and their caregivers through a specialized physical therapist and trainer.

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