

## A cross sectional study to assess the knowledge, attitude and risk of Parkinson Disease among older adults

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### Abstract

Parkinson's Disease, a progressive nervous system disorder, involves the deterioration of nerve cells in the brain, leading to symptoms like movement difficulties, tremors, stiffness, and impaired balance. Beyond motor symptoms, non-motor complications such as neurobehavioral issues, autonomic dysfunction, sensory problems, depression, anxiety, rapid eye movement, sleep behavior disorder and dementia are also significant aspects of the disease. Aim: The study aims to assess the knowledge, attitude and risk of Parkinson Disease among older adults. Methods: Non experimental research design and Purposive Sampling technique were used. Structured knowledge questionnaire and dichotomy scale for assessing attitude and risk assessment using Montreal Cognitive assessment Scale. Results: The participants were grouped into 50-55 years is (33%), 55-60 years (30%), 60-65 years (24%), 65-75 years (35%). Age group of 50-55 yrs has good knowledge on Parkinson disease. The age group of 50-55 years has good attitude 34.9%. 55-60 years has fair attitude 41%. Male has good attitude 50.4% than females. Male has good knowledge 53.3% than females. The mean score for risk is  $\geq 4$ , were participants those at risk is 25% in all age groups. Among the age group assessed by using Montreal Cognitive Assessment Scale 50-55 years is 31.3 % and male is 56.3% which shows high risk for developing Parkinson Disease. Conclusion: The study concluded that tremors were found to be risk factor among the participants assessed.

**Keywords:** Parkinson Disease; Substantia nigra; Dopamine; Rigidity; Tremor; Bradykinesia; Postural instability; Cognitive impairments; Montreal Cognitive Assessment Scale

### 1. Introduction

Parkinson's disease is a progressive neurological disorder affecting movement, caused by the deterioration or death of nerve cells in specific regions of the brain. Symptoms typically begin gradually, possibly with a slight tremor in one hand, and progress to include stiffness in movements, tremors, impaired balance, and difficulty with walking and daily tasks(1). Alongside these motor symptoms, non-motor symptoms such as neurobehavioral issues (e.g., depression, anxiety), autonomic dysfunction, and sensory problems also significantly impact patients. The World Health Organization (WHO) highlights Parkinson's disease as a public health concern, advocating for global health policies that emphasize prevention, risk reduction, education, and access to treatment and care across healthcare systems(2). While there is currently no cure for Parkinson's disease, ongoing research into medications and surgical interventions offers promising avenues for managing and alleviating motor symptoms.

### 2. Material and methods

The materials and methods section outlines the study's quantitative research approach, utilizing a non-experimental design. It details demographic variables including age and gender, along with variables related to CTS and its risk

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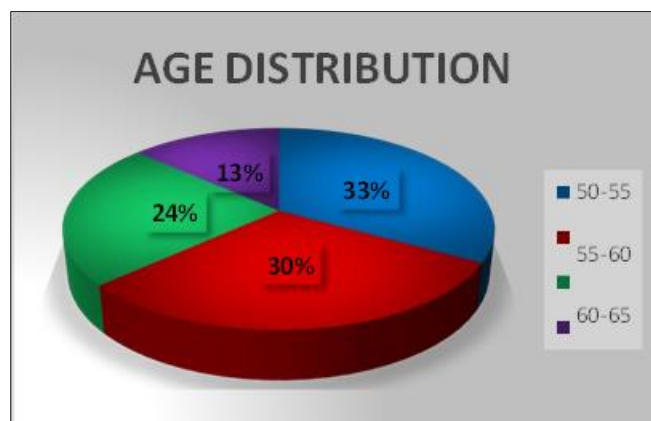
factors. Conducted at ACS Medical College and Hospital in Chennai, encompassing both urban and rural areas, the study targeted individuals susceptible to Parkinson, with a sample size of 600 patients meeting inclusion criteria through simple random sampling. Criteria for sample collection specified old-aged individuals from 50 to 70 years. The study's aim is to assess knowledge on Parkinson and its attitude and risk factors using Montreal Cognitive assessment Scale among older adults, with objectives focusing on evaluating risk through symptoms and predispositions, and correlating these risks with demographic variables.

### 3. Results

#### 3.1. Age distribution

The present study Included 600 Participants.

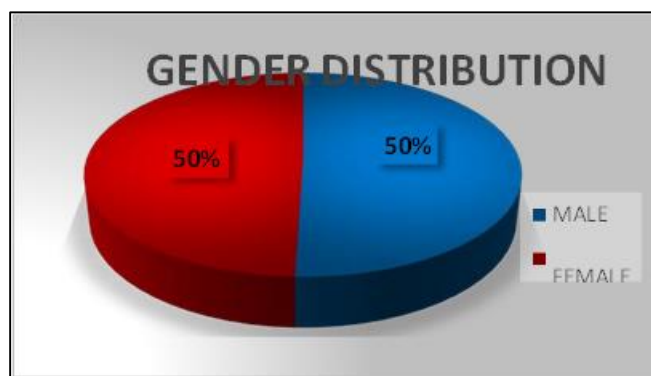
##### 3.1.1. Section 1: age distribution



**Figure 1** Total age distribution

Figure 1 Out of 600 participants comprising both gender 33% people were between 50-55 years of age, 30% people were between 55-60 years of age, 23% people were between the age of 60-65 years of age, 14% people were between the age of 65-70 years of age.

##### 3.1.2. Section 2: gender distribution



**Figure 2** Total gender distribution

Figure 2 Out of the 600 participants 303 are male (51%) and 297 are female (49%), This implies both male and female are involved in the study. The following analysis shows that more male participants in the study than female participants.

3.1.3. Section 3: Age distribution vs knowledge

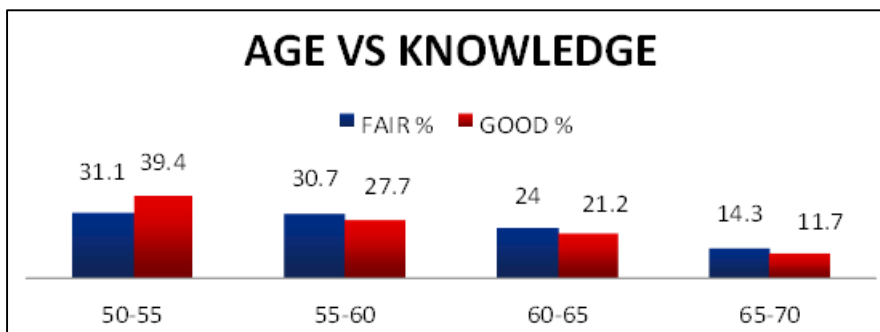


Figure 3 Total age distribution vs knowledge

Figure 3 It appears that participants between the ages of 50 and 55 have a higher level of knowledge (39.4%) about Parkinson disease compared to those in the 60 to 70 age range. This finding could potentially be attributed to factors such as access to information, personal experiences, or even differences in educational backgrounds.

3.2. Total gender distribution vs knowledge

Table 1 Total gender distribution vs knowledge

Gender	Fair knowledge		Good knowledge	
	N	%	N	%
MALE	230	49.7%	73	53.3%
FEMALE	233	50.3%	64	46.7%

Figure 3.2 based on the gender distribution in the assessment of knowledge, it appears that male exhibit (53.3%) of knowledge compare too female (46.7%).

3.3. Total age distribution vs attitude

Table 2 Total age distribution vs attitude

Age	Fair attitude		Good attitude	
	N	%	N	%
50-55	8	17.4	190	34.3
55-60	19	41.3	161	29.1
60-65	10	21.7	130	23.5
65-70	9	19.6	73	13.2

Figure 3 based on their distribution of attitudes by age, was good among age group of 55 to 60 years (34.3%) than other age groups

Table 3 Significance of the risk of Parkinson in relation to age, symptoms and Gender

		Sig.	Exp(B)	95% C.I.for	
				Lower	Upper
Step 1a	1. Do you smoke if yes how many packets per day?	.696	.861	.406	.1.826

	2. Have you been diagnosed with any neurological disorder?	.350	.543	.151	1.953
	3. Have you been fainted or loss consciousness recently?	.307	.326	.038	2.791
	1. Have you ever experienced shaking of your hands, arms and legs?	.905	1.052	.456	2.426
	5. Have you ever experienced shuffle in your feet and take tiny steps to walk?	.003	.266	.112	.634
	6. Do you experience losing interest in yourself?	.716	.842	.332	2.132
	7. Have you ever been told or suspected that you seem to act out your dreams while as sleep?	.032	.260	.076	.888
	8. Do you experience moving your limbs during dreams frequently?	.940	.958	.309	2.965
	9. Have you experienced any falls recently?	.660	.784	.265	2.318
	AGE	.850			
	AGE(1)	.392	1.345	.682	2.651
	AGE(2)	.494	1.273	.637	2.546
	AGE(3)	.646	1.187	.571	2.469
	GENDER(1)	.853	1.039	.695	1.552
	Constant	.002	.370		

### 3.4. Total gender distribution vs attitude

**Table 4** Total gender distribution vs attitude

Gender	Fair attitude		Good attitude	
	N	%	N	%
MALE	24	52.2	279	50.4
FEMALE	22	47.8	275	49.6

figure 3.5 based on the gender distribution analysis, it appears that males tend to shows more positive attitude (50.4%)e than compared to females (49.6%)

### 3.5. Total age distribution vs risk

**Table 5** Total age distribution vs risk

Age	No risk		Risk	
	N	%	N	%
50-55	194	33.2	4	25.0
55-60	176	30.1	4	25.0
60-65	136	23.3	4	25.0
65-70	78	13.4	4	25.0

**Table 6** Total age distribution vs moca scale

Age	No risk		Risk	
	N	%	N	%
50-55	57	38.0	141	31.3
55-60	48	32.0	132	29.3
60-65	30	20.0	110	24.4
65-70	15	10.0	67	14.9

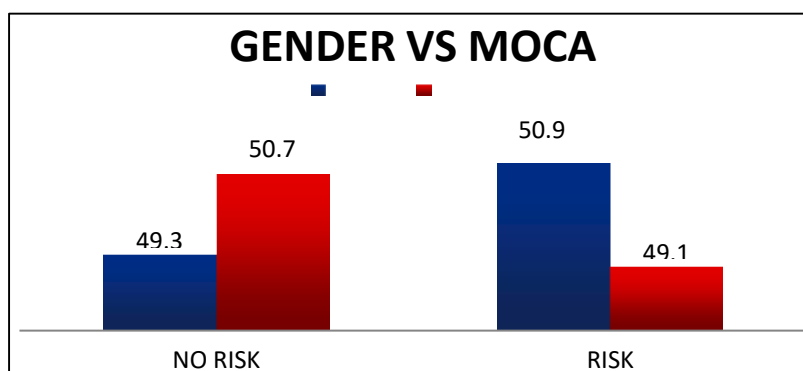
Figure 3.7 In this analysis age group between 50 to 55 years has higher risk (38%) while comparing to other age group

### 3.8 Assessment of risk by gender distribution

**Table 7** Assessment of risk by gender distribution

Gender	No risk		Risk	
	N	%	N	%
MALE	294	50.3	9	56.3
FEMALE	290	49.7	7	43.8

Figure 4 In this analysis, male gender has quite risk (56.3%) compares to female, while male tends to experience motor symptoms [tremor,rigidity,bradykinesia]and female more likely to experiences non motor symptoms [depression and anxiety].



**Figure 4** Total gender distribution vs moca scale

Figure 3.9 That male gender is in higher risk (50.9%) than female (49.1%)

## 4. Discussion

The awareness and understanding of Parkinson's disease among older adults vary significantly based on age and gender. Research indicates that individuals aged 50 to 55 generally possess a higher level of knowledge (39.4%) about Parkinson's compared to those aged 60 to 70, potentially due to differences in access to information or educational backgrounds(3). Moreover, males tend to exhibit greater awareness (53.3%) than females (46.7%). However, overall knowledge among Parkinson's patients remains inadequate across various aspects of the disease, including diagnosis and treatment options, with misconceptions prevalent regarding medication benefits. Attitudes towards Parkinson's among older adults also vary, with the 55 to 65 age group showing a more positive outlook (34.3%) compared to others, and males slightly more positive (50.4%) than females (49.6%). Interestingly, ethnic disparities exist, with African-Americans and Chinese-Americans more likely than Caucasians to perceive Parkinson's as a normal part of aging, with Chinese-Americans perceiving more treatment barriers(4). The risk assessment using the MOCA scale shows equal overall risk (25%) across age groups for developing Parkinson's, but the 50 to 55 age group faces a higher risk (38%).

Males generally exhibit a higher risk (56.3%) than females, with males predominantly experiencing motor symptoms and females more inclined towards non-motor symptoms. Gender-based analysis using the MOCA scale confirms a slightly higher risk for males (50.9%) compared to females (49.1%)(5)(6)

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## 5. Conclusion

In conclusion, the findings underscore the importance of tailored educational efforts to enhance awareness and understanding of Parkinson's disease among older adults. Age and gender disparities in knowledge and attitudes highlight the need for targeted interventions that address varying informational needs and perspectives. Efforts should focus on dispelling misconceptions about Parkinson's treatment and symptoms, particularly among those aged 50 to 55 who show higher knowledge levels. Additionally, addressing ethnic differences in perception and access to care is crucial for improving overall disease management and outcomes. By integrating comprehensive education and community outreach strategies, healthcare providers can better support older adults in navigating Parkinson's disease, ultimately enhancing their quality of life and treatment outcomes.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

### *Statement of ethical approval*

The study has been approved by Institutional Ethical Committee dated at No.981/2023/IEC/ACSMCH Dt.17/11/2023

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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