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Socio-demographic Characteristics of Parkinson's Disease Patients attended at a Tertiary Care Hospital in Dhaka City

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Abstract

Background: Parkinson's disease occurs in different socio-demographic characteristic people. **Objective:** The Purpose of the present study was to see the socio-demographic characteristics of Parkinson's disease patients attended at a tertiary care hospital in Dhaka city. **Methodology:** This cross-sectional study was carried out in the in-patient and out-patient Department of Medicine and Neurology of Sir Salimullah Medical College and Mitford Hospital, Dhaka from July 2012 to December 2013 for a period of one and half year. All patients with Parkinson's disease who were admitted under department of Medicine and Neurology and also who visited out-patient department of Medicine and Neurology of Sir Salimullah Medical College and Mitford Hospital, Dhaka were taken as study population. Patients who were diagnosed as Parkinson's disease according to Brain Bank clinical criteria for diagnosis of Parkinson's disease were included in this study. The demographic and socio-economic characteristics were recorded in a semi-structured questionnaire. **Result:** A total number of 40 Parkinson's patients were recruited for this study. The mean age was 69.15±10.08 years. The male female ratio was found 1.22:1. The majority patients were businessman which was 13(32.5%) cases. The majority of 15(37.5%) patients came from rural area. However, 12(30.0%) patients were in primary level. Furthermore, 21(52.5%) patients came from lower class. **Conclusion:** In conclusion elder male rural dwellers are mostly suffering from Parkinson's disease. [*Journal of Current and Advance Medical Research 2019;6(2):106-110*]

Keywords: Socio-demographic Characteristics; Parkinson's disease; Dhaka City

Introduction

Parkinson's disease is the second commonest neurodegenerative disease[1]. The prevalence of Parkinson's disease is about 0.3% of the whole population in industrialized countries, it is more common in the elderly and prevalence rises from 1% in those over 60 years of age to 4% of the population over 80 years[2]. The mean age of onset is around 60 years, although 5–10% of cases, classified as young onset, begin between the ages of 20 and 50 years[3].

Age specific prevalence of Western Europe and world most populous countries including Bangladesh, the number of individual over 50 with Parkinson's disease is expected to more than double from 4.1 million in 2005 to 8.7 million in 2030[4].

The costs of Parkinson's disease to society are high and differ between countries. The annual cost in UK is estimated to be between 449 million and 3.3 billion pounds, while the cost per patient per year in U.S. is around $10,000[5].

Most Parkinson's disease occurs sporadically and are of unknown cause[3]. Twin studies suggest that environmental factors play more important role in patients older than 50 years, with genetic factors being more important in younger patients[1]. Epidemiologic studies suggest increased risk with exposure to pesticides, rural living, and drinking well water and reduced risk with cigarette smoking and caffeine[6].

About 10.0% to 15.0% of cases are familial in origin and associated of multiple specific gene mutations among which mutation in Parkin gene are associated with 50.0% of early onset inherited and 20% of sporadic early onset Parkinson's disease[7]. This present study was undertaken to see the socio-demographic characteristics of Parkinson's disease patients attended at a tertiary care hospital in Dhaka city.

Methodology

This cross-sectional study was carried out in the in-patient and out-patient Department of Medicine and Neurology of Sir Salimullah Medical College and Mitford Hospital, Dhaka from July 2012 to December 2013 for a period of one and half year. All patients with Parkinson's disease who were admitted under department of Medicine and Neurology and also who visited out-patient department of Medicine and Neurology of Sir Salimullah Medical College

and Mitford Hospital, Dhaka were taken as study population. Patients who were diagnosed as Parkinson's disease according to Brain Bank clinical criteria for diagnosis of Parkinson's disease were included in this study. The demographic and socio-economic characteristics were recorded in a semi-structured questionnaire. Respondents were selected by non-probability purposive sampling method on the basis of willingness of the patients, attendants and inclusion criteria were applied. Before data collection, informed written consent was taken from patient himself/herself or his/her attendant. A semi-structured questionnaire and checklist was prepared for each patient. The interview schedule was made in Bengali which included questions related to the objects of the study. Data was collected by researcher himself. All the data were checked and edited after collection. Then the data were entered into computer and statistical analysis of the result was obtained by using Windows based computer software devised with statistical packages for Social Sciences (SPSS-16). The statistical terms includes in this study are mean, standard deviation, percentage. After collection, all data were checked for inadequacy, irrelevancy and inconsistency. All irrelevant and inconsistent data were corrected or discarded methodically. Prior to the commencement of this study, the research protocol was approved by the thesis committee of Sir Salimullah Medical College and Mitford Hospital, Dhaka.

Result

This study was conducted in Sir Salimullah Medical College and Mitford Hospital with a view to see the socio-demographic characteristics of Parkinson's disease. All socio-demographic characteristics were noted. It was observed that 15(37.5%) patients belonged to age 71 to 80 years and their mean age was found 69.15±10.08 years (Table 1).

Table 1: Distribution of the study population by age (n=40)

Age Group	Frequency	Percent
Less than 50 Years	2	5.0
51 to 60 Years	8	20.0
61 to 70 Years	13	32.5
71 to 80 Years	15	37.5
More Than 80 Years	2	5.0
Total	**40**	**100.0**
Mean±SD (Range)	69.15±10.08 (48 to 100)	

It was observed that male were found 22(55.0%) cases and female were found 18(45.0%) cases. Male female ratio was found 1.22:1 (Table 2).

Table 2: Distribution of the Study Population by Sex

Gender	Frequency	Percent
Male	22	55.0
Female	18	45.0
Total	**40**	**100.0**

It was observed that majority patients were businessman which was 13(32.5%) cases and among the female patients majority were housewife which was 32.5% cases (Table 3).

Table 3: Distribution of the Study Population by History of Occupational Status

Occupational Status	Frequency	Percent
Service Holder	1	2.5
Farmer	4	10
Labour	3	7.5
House wife	13	32.5
Businessman	13	32.5
Others	6	15
Total	**40**	**100.0**

Table 4 shows the place of living of study population. It was observed that majority 15(37.5%) patients came from rural area.

Table 4: Distribution of the Study Population by Place of Living

Place of Living	Frequency	Percent
Urban	12	30
Sub-Urban	13	32.5
Rural	15	37.5
Total	**40**	**100.0**

It was observed that 12(30.0%) patients educated at primary level. Illiterate patients was found 7(17.5%) cases group (Table 5).

It was observed that 21(52.5%) patients came from lower class and rest of the 19(47.5%) study population came from lower middle class socio-economic status but there was no patients' upper middle and higher socio-economic status (Table 6).

Table 5: Distribution of the Study Population by Literacy

Literacy	Frequency	Percent
Illiterate	7	17.5
Primary	12	30.0
SSC	4	10.0
HSC	10	25.0
Graduate	5	12.5
Masters	2	5.0
Total	**40**	**100.0**

Table 6: Distribution of the study population by socio-economic status

Socio-Economic Status	Frequency	Percent
Lower class	21	52.5
Lower-Middle class	19	47.5
Upper-Middle class	0	0.0
Higher class	0	0.0
Total	**40**	**100.0**

Lower-income (GNI per capita is 7000 or less); Lower middle income (GNI per capita is 7000-27000); Upper middle income (GNI per capita is 27000-84000); Higher income (GNI per capita is >84000) (Ref. UNICEF, 2012)

Discussion

Parkinson disease (PD) is a neurodegenerative disease characterized by chronic and progressive loss of dopaminergic neurons in substansia nigra pars compacta. In this study socio-demographic characteristics of the patient with Parkinson's disease are evaluated. During the study period a total of 40 patients diagnosed as Parkinson's disease by Neurologist and Medicine specialist by clinical criteria admitted under Department of Medicine and Neurology and also visited outpatient Department of Medicine and Neurology of Sir Salimullah Medical College and Mitford Hospital, Dhaka were included.

In this study it was observed that 37.5% patients were in 8th decade and their mean age was 69.15±10.08 years, varied 48 to 100 years. Iranmanesh et al[8] showed the mean age of male patients was 64.7±6.4 years; furthermore, the author has reported that 20.0% of patients were under 60 years, 18.0% between 61 to 65 years, 28.0% were between 66 to 70 years and 34.0% were more than 70 years old, which is consistent with the current study. Findley[9] mentioned in his study that one in seven patients with PD is under the age of 50 years, and there is an increase in prevalence with increasing age. In this study only 5.0% of patients were 50 years or below which is much lower than that of previous

study. The prevalence of PD in industrialised countries is thought to be approximately 0.3% reported by de Lau and Breteler[10]. This rises to 1.0% in people over the age of 60 and 3% in people over 80 years[11]. In the UK, PD is estimated to affect 100 to 180 per 100,000 of the population and has an annual incidence of 4 to 20 per 100,000 population[12]. Finding of present study regarding age also consistent with these previous studies.

In this study it was observed that male was 55.0% which indicates that Parkinson's disease is more common in male subjects. Male to female ratio was 1.2:1. In Iranmanesh et al[8] research, 52.0% of the people are males and 48.0% cases were females. Tan et al[13] showed 53.8% were males and 46.2% were females. The report of present study also supports previous studies.

Occupational status of the patients has been observed that female patients are mostly housewives which was 32.5% cases. Most of the male patients are Businessman, which is about 32% cases. Tsui et al[14] obtained in their study that Parkinson's disease is associated with teaching (OR=2.50 with 95% CI 1.67-3.74%) and occupation in healthcare services (OR=2.07 with 95% CI 1.34-3.20%); however, there are several other substantial associations, both positive and negative. The discriminating report of the present study may be due to the narrow coverage of population in this study.

In this study it was observed that majority patients has come from rural area which is 37.5% cases. Longlo et al[15] have concluded from many epidemiologic studies that there is increased risk of Parkinson's disease with rural living, which is also supported by this study.

Regarding the educational status of subjects it has been observed that majority of the patients are educated at primary level which is 30.0% cases. Illiterate patients are found in 17.5% cases group. Previous study reports suggest that the higher the level of education the greater the risk of developing Parkinson's disease[14]. The dissimilarity in report of educational status of the current study may be due to a reflexing of overall educational status of the country.

Observation showed that 52.5% patients has come from lower class family. A total population study in Sweden by Yang et al[16] have concluded as lower socioeconomic status is associated with reduced risk of Parkinson's disease.(Yang, F et al. 2014). Discriminating report in the current study may be the

reflexion of overall socioeconomic status of the country.

Conclusion

In conclusion elder patients are more commonly suffering from Parkinson's disease. However, male is predominant than female. Furthermore, rural dwellers are mostly suffering from Parkinson's disease. Majority of the Parkinson's disease patients were from lower socio-economic condition. Further large scale and multicenter countrywide study should be conducted.

References

1. Valldeoriola F, Coronell C, Pont C, Buongiorno MT, Cámara A, Gaig C, Compta Y, members of the ADHESON Study Group. Socio-demographic and clinical factors influencing the adherence to treatment in Parkinson's disease: the ADHESON study. European Journal of Neurology. 2011;18(7):980-7.
2. Elbaz A, Moisan F. Update in the epidemiology of Parkinson's disease. Current opinion in neurology. 2008;21(4):454-60.
3. Pontieri FE, Assogna F, Pellicano C, Cacciari C, Pannunzi S, Morrone A, et al. Sociodemographic, neuropsychiatric and cognitive characteristics of pathological gambling and impulse control disorders NOS in Parkinson's disease. European Neuropsychopharmacology. 2015;25(1):69-76.
4. Bach JP, Ziegler U, Deuschl G, Dodel R, Doblhammer-Reiter G. Projected numbers of people with movement disorders in the years 2030 and 2050. Movement disorders. 2011;26(12):2286-90.
5. Kwak M. Social demographic characteristics and direct medical costs for patients with Parkinson's disease In Korea: Big data analysis from the National Health Insurance Claims Dataset. Value in Health. 2015;18(7):A751.
6. Ascherio A, Schwarzschild MA. The epidemiology of Parkinson's disease: risk factors and prevention. The Lancet Neurology. 2016;15(12):1257-72.
7. Papuć E, Stelmasiak Z. Factors predicting quality of life in a group of Polish subjects with multiple sclerosis: accounting for functional state, socio-demographic and clinical factors. Clinical neurology and neurosurgery. 2012;114(4):341-6.
8. Iranmanesh F, Gadri F, Bakhshi H, Sarhadi S. Serum uric acid level in Patients with Parkinson Disease. Zahedan Journal of Research in Medical Sciences. 2013;15(9):6-9.
9. Findley LJ. The economic impact of Parkinson's disease. Parkinsonism & related disorders. 2007;13:S8-12.
10. De Lau LM, Breteler MM. Epidemiology of Parkinson's disease. The Lancet Neurology. 2006;5(6):525-35
11. Nussbaum RL, Ellis CE. Alzheimer's disease and Parkinson's disease. New england journal of medicine. 2003;348(14):1356-64.
12. The National Collaborating Centre for Chronic Conditions (2006). Parkinson's disease: national clinical guideline for diagnosis and management in primary and secondary care. London: Royal College of Physicians.
13. Tan LC, Tan AK, Tjia HT. The profile of hospitalised patients with Parkinson's disease. Annals-Academy Of Medicine Singapore. 1998;27:808-12.

14. Tsui JK, Calne DB, Wang Y, Schulzer M, Marion SA. Occupational risk factors in Parkinson's disease. Canadian journal of public health. 1999;90(5):334-7.

15. Longlo DL, Kasper DL, Jameson IJ, Fauci AS, Mauser SL, Loscalzo J. Harrison's principles of internal medicine. 18th ed. New York McGraw Hill. 2012;3317-35

16. Yang F, Lagerros YT, Bellocco R, Adami HO, Fang F, Pedersen NL, et al. Physical activity and risk of Parkinson's disease in the Swedish National March Cohort. Brain. 2014;138(2):269-75