ORIGINAL ARTICLE

Prevalence of Depression in Patients with Parkinson's Disease

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ABSTRACT

Introduction: Parkinson's disease is among most frequently encountered neurological disorders by neurologists. It has a varied spectrum of symptoms and presenting complaints. An important part of this disease is associated depression being commonly seen in these patients.

Objectives: To Determine The Prevalence Of Depression In Patients Having Parkinson's Disease.

Materials and Methods: This study was a cross sectional survey which was conducted at department of Neurology Services Hospital, Lahore over a period of 3 months. A total 114 cases were recruited in this study after informed consent. For evidence of depression, a questionnaire was used as a data collection tool and score was given using beck depression inventory-ii (BDI-ii) criteria. All collected data was entered into SPSS 21 version and was analyzed. In our study descriptive analysis qualitative and quantitative variables were seen.

Results: We found that mean age of the patients was 60.75 ± 9.06 years. Also mean age of onset of disease was found as 55.6 ± 3.84 years. We found that 48 patients (42.1%) in our study were normal according to BDI-ii criteria. Fourteen patients (12.2%) had mild mood disturbance; 19 patients (16.6%) had borderline clinical depression; 15 (13.1%) had moderate depressive mood; 15 patients (13.1%) had severe depressive mood; and 3 patients (2.6%) had extreme depression. The overall prevalence of depression was calculated as 54.3% in our study.

Conclusion: Depression is present in significant number of patients presenting with Parkinson's disease. So it is advised to do psychiatric evaluation of all patients with Parkinson's disease for early detection and proper management.

Key Words: Parkinson's Disease; Depression; Prevalence

INTRODUCTION

Parkinson's disease (PD) is the second most common neurodegenerative disease. It is characterized by the main features of tremors at rest, rigidity and bradykinesia along with inability to maintain posture, balance and gait [(1)]. The exact etiology in most of the patients with PD is unknown. Along with the motor symptoms, many non-motor symptoms are also encountered in patients with PD. These non-motor symptoms are highly prevalent in PD patients[(2)]. In a survey by Shulman LM et al, non-motor symptoms were found in 88% of the patients[(3)]. These patients most commonly had fatigue, depression, sleep disturbances, anxiety and sensory disturbances.

It is now an established fact that along with the motor symptoms in PD, other psychological symptoms need also be treated in these patients. In patients with PD, depression, dementia and psychosis may cause severe disability[(4)]. Another bothersome fact is that many of the symptoms of depression overlap with the symptoms of PD like decreased physical activity, bradyphrenia, lack of motivation and withdrawal[(5)]. This makes the exact diagnosis of depression among PD patients a necessary thing to be done.

The prevalence of depression in PD patients varies in literature from 2.9% to more than 90% of the patients[(6, 7)]. Authors have investigated to this varied prevalence among different studies and have found many reasons including type of tool used for diagnosis of depression, population to be studied and depression type included[(8, 9)]. There are minimal studies in the literature available on the prevalence rate of depression among PD patients in our area of the world. Therefore this study was planned to look for prevalence rate of depression in PD patients in our country.

MATERIAL AND METHODS

After approval from ethical review board, this study was planned. It was a cross-sectional study which had been conducted at department of Neurology, Services Hospital, Lahore over a period of 3

months. All the patients of Parkinson's disease presenting in outdoor department of the hospital were included in the study. Other inclusion criteria included: patients above 50 years, both genders, fully conscious and having clinical evidence of Parkinson's disease. Patient having deranged higher mental functions, early gait disturbances, cerebeller signs, sphincter disturbances, early autonomic symptoms and history of use of neuroleptic drugs preceding onset of Parkinson disease were excluded from the study. For evidence of depression, a questionnaire was used as a data collection tool and score was given using Beck Depression Inventory-II (BDI-II). BDI-II is a 21 items questionnaire and the resulting scores may range from 0 to 63. The higher the scores, more severe is the depressive mood. Interpretations of the scores are as follows: 1 - 10, normal; 11 - 16, mild mood disturbance; 17 -20, borderline clinical depression; 21 - 30, moderate depressive mood; 31 - 40, severe depressive mood; and over 40, extreme depression. All the patients in the study were provided with self-formulated Urdu version of BDI-II and they were asked to fill it. According to a study, prevalence of major depression in Parkinson's disease patients is 2.7%. Then taking estimated population of Lahore as 10000000, a margin of error of 5% and confidence interval of 99.9%, the sample size calculated was 114 patents. All the data were recorded in the proforma and it was statistically analyzed using SPSS version 21. Mean ± SD were calculated for qualitative variables and frequencies and percentages were calculated for quantitative variables.

RESULTS

A total of 114 patients were included in the study. The mean age of the patients was calculated to be 60.75 ± 9.06 years. Among these 114 patients, 61 were male while remaining 53 patients were females. All the demographic details of the patients is summarized in Table 1.

Table 1: Demographic details of patients in our study

	N (%)
Gender	
Male	61 (53.5%)
Female	53 (46.4%)
Age (in years)	60.75 ± 9.06
Educational level	
Illiterate	41 (35.9%)
Primary school	29 (25.4%)
Middle school	22 (19.2%)
High school	10 (8.7%)
Higher than high school	12 (10.5%)
Age of onset of PD (In years)	55.6 ± 3.84
Family history of PD	
Yes	12 (10.5%)
No	102 (89.5%)

Figure 1: Bar Chart showing scores of patients according to BDI-II

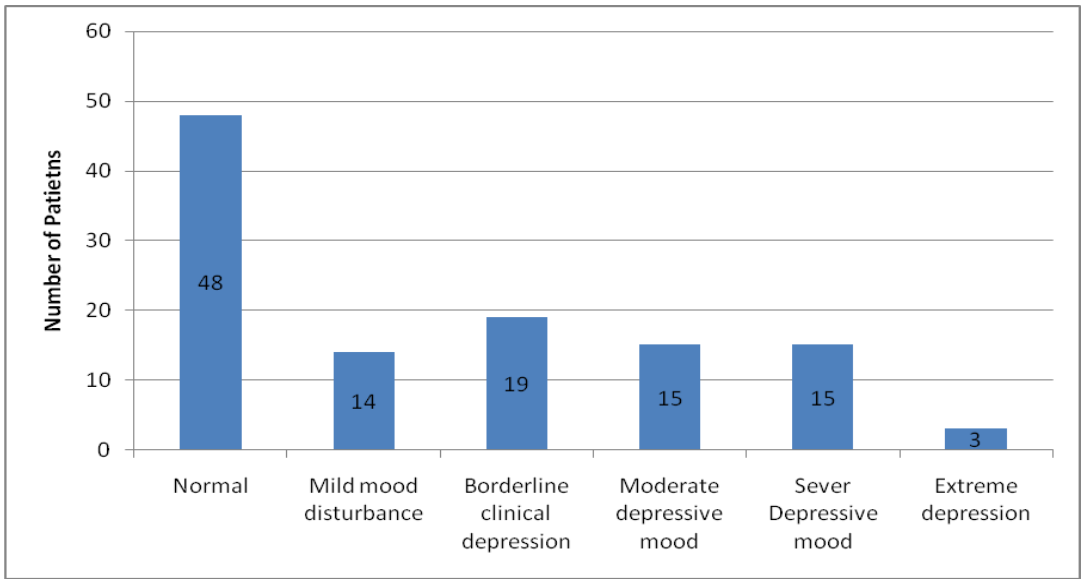

Table 2: Stratification of BDI-II Scores according to gender

Grading of BDI	Male N(%)	Female N(%)	Total
Normal	26 (22.8%)	22 (19.2%)	48
mild mood disturbance	5 (4.3%)	9 (7.8%)	14
borderline clinical depression	11(9.6%)	8 (7%)	19
moderate depressive mood	10 (8.7%)	5 (4.3%)	15
severe depressive mood	8 (7%)	7 (6.1%)	15
extreme depression	1 (0.8%)	2 (1.7%)	3
P Value = 0.628			

We found that 48 patients (42.1%) in our study were normal according to DBI-II criteria. Fourteen patients (12.2%) had mild mood disturbance; 19 patients (16.6%) had borderline clinical depression; 15 (13.1%) had moderate depressive mood; 15 patients (13.1%) had severe depressive mood; and 3 patients (2.6%) had extreme depression (figure 1). The overall prevalence of depression was calculated as 54.3% in our study. Further stratification for age was also done which is summarized in table 2. P vale after chi-square test was found not significant (P = 0.628)

DISCUSSION

There is an established fact that depression does exist with Parkinson's disease. However its prevalence varies from one region to another. At the same time, many tools exist in the literature to measure depression in PD patients [10]. Williams et al. had identified and compared nine tools being used for depression in PD patients [11]. They had found that most of the tools were having high sensitivity. BDI-II had sensitivity of 95% in their study. This is the same scale which has been used in our study.

The mean age of PD patients found in our study was 60.75 ± 9.06 years and age of onset of PD was found as 55.6 ± 3.84 years. Munawar et al conducted a trial and compared Pakistani and Chinese population in relation to PD [12]. They had found that the mean age of onset in our population was 56 years while in Chinese population it was 51.18 years. These findings coincide with our study.

The quality of life (Qol) of patients having PD definitely suffers and one of the factors is depression [13]. Among patients of PD, depression is not supposed to occur as a cause of disease or disability, rather it is considered to be a direct result of all the processes going on in the brain as etiology of PD [14]. Previously, depression had not been considered and being treated with PD. The cause of this ignorance in past may be the etiological difference of depression among PD patients and other general population[15]. According to a study, depression in PD patients exhibits more as cognitive and somatic symptoms rather as dysphoric symptoms like suicide tendency and guilt [16].

We had found in our study the prevalence of depression in our patients with PD as 54.3%. In a study by Ketharanathan T et al. , the prevalence of depression was found to be 37.5% in Sri Lankan population with PD [17]. Rehman and colleagues conducted a similar trial in a province of Pakistan and they found the prevalence of depression among PD patients as 63.33% [18].

Reijnders et al conducted a meta-analysis on the topic. They had included 107 studies and concluded the prevalence of depression among PD patients as 17% [7]. However in most of the local studies conducted in this region of the world, the prevalence of depression was found quite high as in our study.

On the basis of this study, we conclude that depression is quite prevalent in our population. Therefore in patients with PD, it should not be ignored rather properly treated. We must arrange some seminars or workshops to educate our clinicians and patients regarding this important aspect of PD. At the same time, we recommend more trials with larger sample size which should be community based to look into exact prevalence of depression among PS patients in our population.

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