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Frequency of depression amongst patients with Parkinson disease at tertiary care hospital of Quetta

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Abstract--Background: Depression and anxiety are frequent mood problems associated with Parkinson disease (PD). The occurrence of mood disorders has, however, only been the subject of a small number of investigations. Objective: To assess the frequency of Depression amongst patients with Parkinson disease at tertiary care hospital of Quetta. Methodology: The current cross sectional study was carried out Balochistan Institute of Psychiatry and Behavioral Sciences and Bolan Medical Complex Hospital Quetta from December 2019 to December 2020. All those individuals were selected for study which has confirmed PD diagnosed by one or more than single Neurophysicians. A standard and well-defined questionnaire was used and then score was assigned using Beck Depression inventory- II (BDI-II) to depression evidences. The SPSS version 24.0 was used to input and analyze the data. Results: In our study, totally 40 patients were enrolled. The male patients were 36 (90%) while female patients were 4 (10%). The mean age (SD) in our study was 52 (11.6) years. Based on level of depression, 4 (10%) patients were normal, 18 (45%) were observed with mild depression, 2 (5%) were with borderline clinical depression, 4 (10%) patients were with moderate depression, 5 (12.5%) with Severe depression while 7 (17.5%) patients were observed with extreme severe depression. Conclusion: Our study concludes that level of depression is high amongst Parkinson disease patients. This finding will help the clinicians to screen for symptoms of depression associated with Parkinson disease and treatment would do appropriately.

Keywords--frequency, depression, Parkinson disease.

Introductions

Depression and anxiety are frequent mood problems associated with Parkinson disease (PD). According to systematic studies, depression and anxiety in Parkinson's disease ranged from 2.7–90% to 6–55% [1, 2], and both affect patient quality of life [3]. The occurrence of mood disorders has, however, only been the subject of a small number of investigations. As a consequence, it's crucial to look into whether people with Parkinson's disease have mood abnormalities and to pinpoint the causes of these symptoms. Both disease-specific and non-disease-specific risk factors for depression and anxiety in Parkinson's disease have been found. Parkinson's disease-related risk factors for depression include advanced disease stages, sleep disruption as a nonmotor symptom, severe motor symptoms, a higher levodopa dosage, and a longer duration of illness [4, 5]. Less is known about the variables connected to anxiety as compared to depression in Parkinson's disease [6]. Motor fluctuations, depression, and dysautonomia were all linked to anxiety in Parkinson's disease [7, 8]. Age, family status, gender, exposure to chemicals and pesticides, and comorbidities that cause depression and anxiety are all strongly linked to Parkinson's disease [9]. Other variables that affect the development of anxiety and depression include behaviour problem, family history, past experiences with depression and anxiety, and reliance on social support [10, 11]. The majority of Parkinson's disease patients also reported anxiety and depression, but it's unclear if their underlying causes are the same or different. Previous research found no correlation between anxiety and depression [12]. Parkinson's disease sufferers' anxiety and depression's pathogenesis is still a mystery. Depression has been related in the past to significant motor impairment and reduced dopamine transporter (DAT) activity [13]. Anxiety in Parkinson's disease patients may result from psychological reactions to non-motor symptoms and motor development that is impaired, according to the findings of another research. The objective of the current research was to assess the frequency of Depression amongst patients with Parkinson disease at tertiary care hospital of Quetta.

Material and Method

The current study was cross sectional, carried out at Balochistan Institute of Psychiatry and Behavioral Sciences and Bolan Medical Complex Hospital Quetta. The study duration was one years from December 2019 to December 2020. The study approval was taken from IRB of the institute. The calculated sample size based on WHO sample size calculator was 4. All those participants were valid for the study which has complete results prescribed medication forms. All those individuals were selected for study which has confirmed PD diagnosed by one or more than single Neurophysicians. The entire participants were diagnosed by doctor specialist of neurophysician at hospital or private clinics. All the participants have symptoms of PD with response to Levopoda therapy diagnosed by expert of Neurology. A standard and well-defined questionnaire was used which helps in collection and sensitively evaluation of the data and then score was assigned using Beck Depression inventory- II (BDI-II) to depression evidences. BDI-II contains twenty one items questions and the scores may range from 0 to 63. The scores are higher, severe is the depression. Elucidations of the depression scoring are: normal is (1 - 10); mild mood disturbance (11 - 16);

borderline clinical depression (17 -20); moderate depressive mood (21 - 30); severe depressive mood (31 - 40); extreme depression (over 40). Informed consent was taken in written from all the participants. A pre-designed proforma was then used to collect all the required information's. The SPSS version 24.0 was used to input and analyze the data. Frequencies and percentages were used to represent qualitative variables. In terms of Mean SD, quantitative variables were represented.

Results

In our study, totally 40 patients were enrolled. The male patients were 36 (90%) while female patients were 4 (10%). The mean age (SD) in our study was 52 (11.6) years. Based on age distribution, 6 (15%) patients were in age group less than 50 years while 34 (85%) patients were above 50 years. The mean (SD) duration of disease was 14 (2) years. The disease duration in 10 (25%) patients was less than 12 years while in 30 (75%) it was more than 12 years. Based on level of depression, 4 (10%) patients were normal, 18 (45%) were observed with mild depression, 2 (5%) were with borderline clinical depression, 4 (10%) patients were with moderate depression, 5 (12.5%) with Severe depression while 7 (17.5%) patients were observed with extreme severe depression.

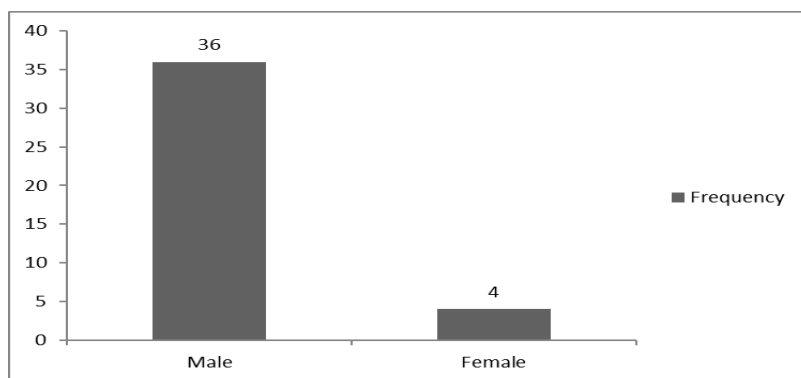


Figure 1: Gender wise distribution of patients

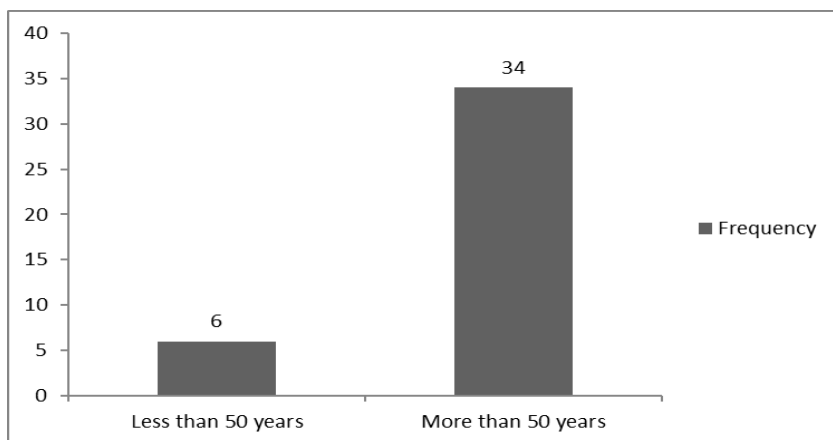


Figure 2: Age wise distribution of patients

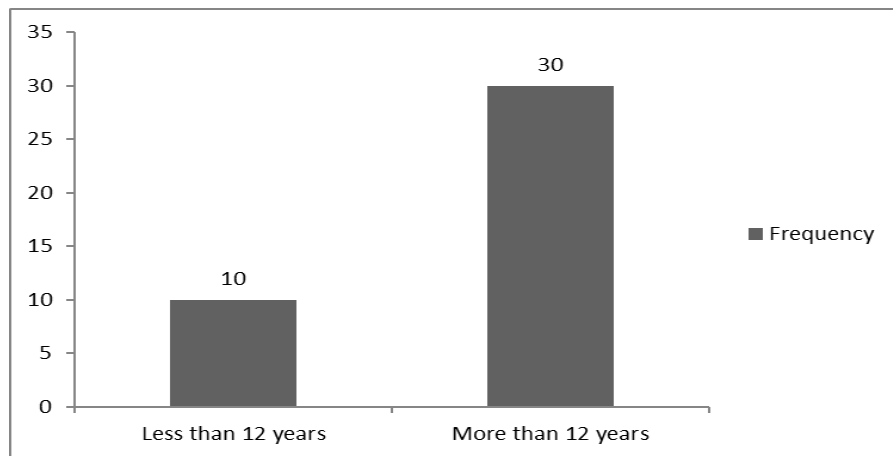


Figure 3: Distribution of patients based on disease duration

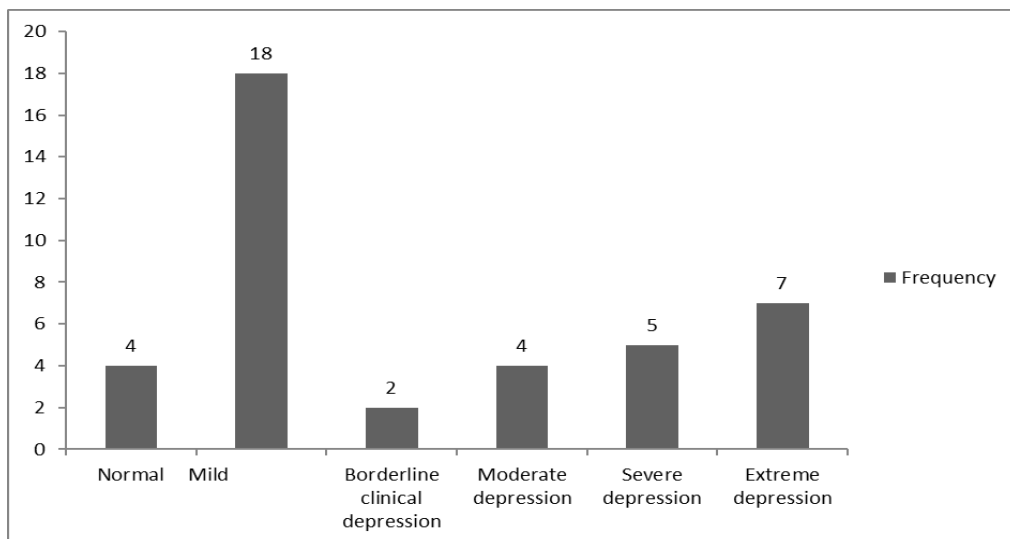


Figure 4: Distribution of depression amongst patients with Parkinson disease

Discussion

Previous research shows that depression is the non-motor symptom in PD and the prevalence of depression varies greatly depend on population studied. There are different studies shows different prevalence rates in different races and population. In Asian population the prevalence also varies, Even in Pakistan the depression prevalence also varies, as most of the study includes random and different races of population [14-16]. Different methods are available in literature studies which is used to calculate depression associated with PD patients [17]. There are about nine different tools being used for (Identified and compared by Williams et al.) identification and comparison of depression in PD patients [18]. They also found that most of the methods used for depression have high sensitivity. In our study we used BDI- II which has 95% sensitivity.

In our study, totally 40 patients were enrolled. The male patients were 36 (90%) while female patients were 4 (10%). The mean age (SD) in our study was 52 (11.6) years. Based on age distribution, 6 (15%) patients were in age group less than 50 years while 34 (85%) patients were above 50 years. Our finding coincides with other study [19]. The mean (SD) duration of disease was 14 (2) years. The disease duration in 10 (25%) patients was less than 12 years while in 30 (75%) it was more than 12 years. Based on level of depression, 4 (10%) patients were normal, 18 (45%) were observed with mild depression, 2 (5%) were with borderline clinical depression, 4 (10%) patients were with moderate depression, 5 (12.5%) with Severe depression while 7 (17.5%) patients were observed with extreme severe depression. In the current study the prevalence of depression in PD patients was high as compare to previous studies reported [16]. The Possible reasons for differences in prevalence of depression includes, the use of different methods, the way of diagnosis and selected population nature used to calculate depression. This present study have similar rate of depression in PD patients as reported in most of the western and Asian populations [17,20-22]

The studies show that depression is the one non-motor symptom in PD patients which have negative effect on the quality of life (Qol) [23]. Depression is not supposed to occur as a cause of illness or disability, but it is measured to be shortest consequences of all the progression going in the brain of PD patients [24]. In past, depression are not considered and being treated with PD, due to this ignorance in past may be the etiological differences of depression in PD patients and other common populations [25]. In previous study, depression in PD shows more as somatic and cognitive indications rather as dysphoric indications such as guilt and suicide tendency [26].

Previous research shown that the chemical changes in the brain of PD patients may lead to depression as itself caused by the illness which is shown by positron emission tomography (PET) that depressed PD patients have reduced cortical 5HT1A receptor binding with small amount of cerebrospinal fluid (CSF) 5-hydroxyindolacetic acid (5HT1A) levels as contrast with non-depressed patients [27]. Therefore more advanced research is needed to explain the biological basis of depression patients associated with PD [28].

Conclusion

Our study concludes that level of depression is high amongst Parkinson disease patients. This finding will help the clinicians to screen for symptoms of depression associated with Parkinson disease and treatment would do appropriately.

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