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Examining Depression in Parkinson's Disease in Sociocultural Contexts: Moving from Stigma to Care

Farhat Yasmin Minhas[1], Junaid Rasool[2], Maryam Raza[3], Hafiz Muhammad Imtiaz Afzal[4], Saba Iqbal[5], Sadia Chaudhary[6]

[1]Department of Psychiatry and Behavioral Sciences Avicenna Medical College & hospital Lahore, Pakistan
[2]Department of Psychiatry and Behavioral Sciences Fatima Memorial Hospital Lahore, Pakistan
[3]Department of Physiology, Rashid Latif Khan University Lahore, Pakistan
[4]Department of Psychiatry and Behavioral Sciences, Pak Red Crescent Medical and Dental College Lahore, Pakistan
[5]Department of Medical Education, CMH Lahore Medical College, Lahore, Pakistan
[6]Department of Behavioral Sciences, Rahbar Medical and Dental College Lahore, Pakistan
***Correspondence:** dmeprcmdc@gmail.com*
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ABSTRACT

OBJECTIVE: This study aims to estimate the prevalence of depression and to explore socio-demographic and clinical risk factors among tertiary-care patients with Parkinson's disease (PD) in Pakistan.

METHODOLOGY: Ninety-four consecutive idiopathic PD patients were recruited for the cross-sectional analytical designed study from CMH Lahore. The study utilized a self-report questionnaire and the Harvard Department of Psychiatry/National Depression Screening Day Scale (HANDS) to gather data from March to May 2023 on patients' age, sex, marital status, employment status, and disease duration. In the study, adult patients with idiopathic Parkinson's Disease without any severe medical condition were included.

RESULTS: The patients were 53 males and 41 females. The prevalence of depression in the study population was 39.36% (N 94). Most of the patients were diagnosed in the age group 51-60 years, and they were found to be more depressed than the younger patients. The most often reported symptoms of depression among individuals who were more depressed were low energy, trouble focusing or making decisions, feeling hopeless, feeling blue, and having trouble sleeping. All analyses were done on SPSS version 26.0 for Windows.

CONCLUSION: In Parkinson's disease (PD), depression symptoms are prevalent, particularly in individuals with more severe cognitive impairment who are more likely to have or aggravate depression. Thus, it is equally important to identify and treat the disease along with any associated depression.

KEYWORDS: Anxiety, Depression, Parkinson's disease, Stress, Pakistan.

INTRODUCTION

Parkinson's disease is the second most prevalent neurodegenerative disorder, which is slightly less frequent than Alzheimer's disease. Approximately 1% of the adult population aged 50-55 is affected.[1] Notable non-motor symptoms such as fatigue, anxiety, stress, depression, sleep disturbances, and sensory deficits are commonly reported by many individuals who are diagnosed with Parkinson's disease[1]. In patients with Parkinson's disease, non-motor manifestations can potentially impact the quality of life of individuals. Up to 90% of patients with idiopathic Parkinson's disease encounter mental health challenges, particularly pronounced depression[2]. An estimated 35% of Parkinson's disease-diagnosed individuals experience depression, which is regarded as the most prevalent neuropsychiatric disorder associated with the condition and serves as a critical indicator of diminished quality of life[3]. Depression, a widespread and perilous condition that substantially lowers the quality of life, affects a considerable number of patients with Parkinson's disease[4].

The prevalence of major depressive disorder among individuals with Parkinson's disease underscores the urgent need for effective interventions and therapeutic strategies aimed at enhancing their quality of life[2]. In Asia, specifically within the context of South Asia, the body of research addressing psychological issues pertinent to Parkinson's disease is notably less prolific than that was observed in Western countries[5]. There exist considerable socio-cultural disparities that may render the findings of Western research in this domain less directly addressed[6]. National variances in depression rates further emphasize the necessity to investigate anxiety, stress, and depression in Parkinson's disease across diverse sociocultural settings.[7] In comparison to individuals afflicted with other chronic illnesses, patients with Parkinson's disease exhibit a diminished quality of life, a heightened prevalence of depression, and increased functional impairments, as evidenced by a study conducted in South Asia.[5] Consequently, the existing literature regarding the prevalence and ramifications of major depressive disorder in individuals with Parkinson's disease is deficient, particularly in South Asia.

Parkinson's disease (PD) is a neurodegenerative disorder often accompanied by depression, significantly impacting patients' quality of life. While extensively studied in Western countries, research in South Asia remains limited, particularly in terms of sociocultural influences. In regions like Pakistan, factors such as mental health stigma, family dynamics, economic constraints, and cultural attitudes toward chronic illness uniquely shape depression in PD patients. Stigma often leads to underreporting, while limited healthcare access delays treatment, worsening symptoms. This study aims to estimate the prevalence of depression and identify socio-demographic and clinical risk factors among PD patients in a tertiary care setting in Pakistan. By examining these sociocultural influences, the research aims to develop culturally sensitive diagnostic tools and interventions, ultimately enhancing mental health outcomes for patients with PD in underserved populations. Understanding these factors is crucial for enhancing care and improving the quality of life for individuals with PD.

METHODOLOGY

This study was a cross-sectional analytical design. Study was carried out in the outpatient department (OPD) of a tertiary care medical facility (CMH) in Lahore called Medicine Clinic from March-May 2023. We included 94 consecutive male and female adult patients with idiopathic Parkinson's disease (PD) who met the sample size criterion and were diagnosed using the United Kingdom Parkinson's Disease Society Brain Bank Diagnostic Criteria (UK-PDS-BB). We excluded the patients with significant speech/visual/hearing impairments and severe medical conditions like renal failure and hepatic impairment. The clinical records of the PD patients were reviewed to establish initial information and to understand the initial assessor's view of the diagnosis. Online informed consent was obtained from the study participants.

A self-report questionnaire was used to collect information on age, sex, marital status, employment status, age of the patient at the onset of the disease, duration of the disease, education level, and medication use. Harvard Department of Psychiatry/National Depression Screening Day Scale (HANDS) was also used to measure the patient's anxiety and depression levels. Seven items regarding anxiety and seven items about depression make up an equal portion of the 14 questions in the HANDS.[8] Every single thing has a scoring system that goes from 0 to 3. Anxiety or despair are indicated by a score higher than 8. For patients with Parkinson's disease (PD), the HANDS's internal consistency and test-retest reliability show significant reliability. For the HANDS, the computed Cronbach's alpha was 0.88.[9.] Descriptive statistics analysis, Percentages, and the student's independent t-test were all used in the statistical analysis. The association between categoric variables was investigated using the Chi-square and logistic regression. The predictive power of variables, such as age, in evaluating depression was assessed using linear regression models. $p < 0.05$ was the significance level. All analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 26.0 for Windows.

RESULTS

A statistical analysis of characteristics associated with depression in a sample of 94 individuals is presented in **Table I**. The data examine demographic factors, such as gender, age, marital status, education level, and income, in addition to disease-related data, including the age at which the condition began and its duration. The data suggests that there might be a strong relationship between the occurrence of depression and several variables, including marital status, education level, and age of beginning[10]. Compared to those who are married, separated, divorced, or have experienced a loss, depression seems to affect single persons more frequently. Depression appears to be less common in those with more education (graduation and beyond) than in people with less education (matriculation).

Table I: Socio-Demographic Characteristics and its Association with Depressive Disorder

Variables	Total No. (%) (n=94)	Depression Yes (n, %)	Depression No (n, %)	p-value
Age Category (years)				
≤50	09 (9.6%)	6 (66.6%)	3 (44.4%)	0.134
51-60	16 (17%)	9 (56.2%)	7 (43.7%)	
61-70	48 (51%)	18 (37.5%)	30 (62.5%)	
71-80	21 (22.3%)	14 (66.6%)	7 (44.4%)	
Gender				
Male	53 (56.3%)	31 (58.4%)	22 (41.5%)	0.657
Female	41 (43.6%)	27(65.8%)	22 (53.6%)	
Status				
Single	7 (7.4%)	2 (28.5%)	5 (71.4%)	0.037
Married	67 (71.2%)	29 (43.2%)	38 (56.7%)	
Separated/Divorced/widowed	20 (21.2%)	15 (75%)	5 (25%)	
Level of Education				
Up to Matriculation	74 (78.7%)	55 (74.3%)	19 (25.6%)	0.029
Graduation & higher	20 (21.2%)	8 (40%)	12 (60%)	
Currently Employed				
Yes	10 (10.6%)	6 (60.0%)	4(40.0%)	0.431
No	84 (89.4%)	43 (51.1%)	41 (48.8%)	
Monthly Income in PKR				
≤50,000	36 (38.2%)	16 (44.4%)	20 (66.6%)	0.265
50,001-100,000	45 (47.8%)	19 (42.2%)	26 (57.7%)	
>100,000	13 (13.8%)	9 (69.2%)	4 (30.7%)	
Age Of Disease Onset				
≤50	17 (18.1%)	9(52.9%)	8(47.0%)	0.815
51-60	57 (60.6%)	39(68.4%)	18(31.5%)	
61-70	20 (21.2%)	8(40.0%)	12(60.0%)	
Duration of PD				
<5	39 (41.4%)	24(61.5%)	15(38.4%)	0.124
5 to 10	21 (22.3%)	10(47.6%)	11(52.3%)	
>10	34 (36.1%)	16(47.0%)	18(52.9%)	

Abbreviations: PKR – Pakistani Rupee.

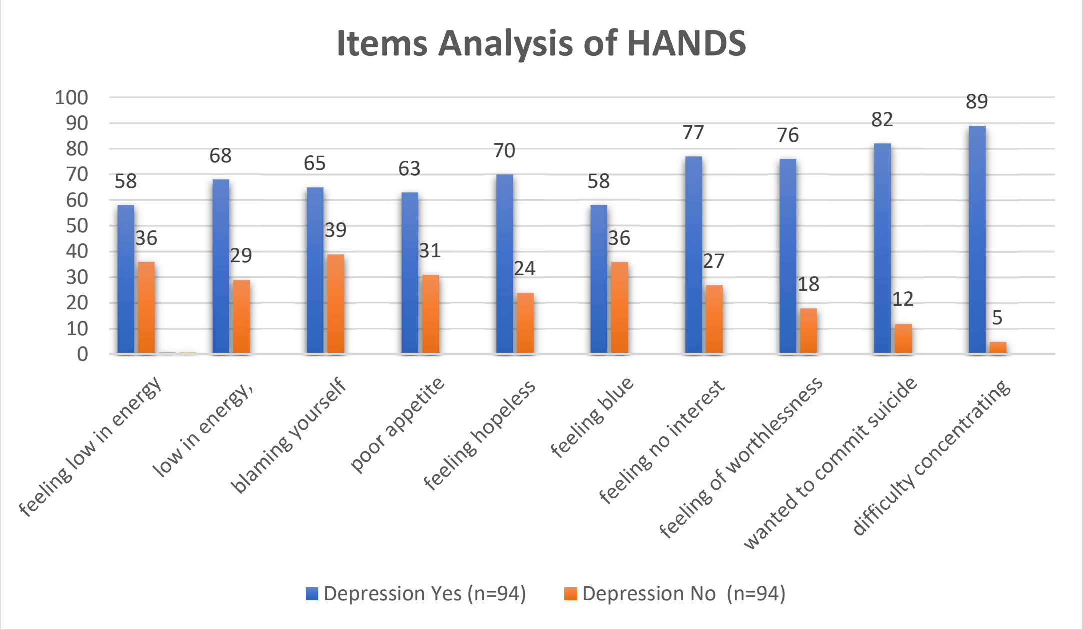
Table II shows that a significant portion of participants reported experiencing depressed symptoms, such as poor mood, feelings of worthlessness and loss of interest. Many individuals experience difficulty focusing, eating, sleeping, and performing other daily tasks. A significant proportion of respondents reported suicidal ideation.

TABLE II: Endorsement of Items on the HANDS among the Patients of Parkinson's Disease

Over the past 1 month, how often have you:	None or occasionally	Some Time	Most of the Time	All Time
Been feeling low in energy, and slowed down	16 (17.0%)	42 (44.6%)	14 (14.8%)	22 (23.4%)
Been blaming yourself for things	49 (52.1%)	16 (17.0%)	17 (18.0%)	12 (12.7%)
Had poor appetite	24 (25.5%)	39 (41.4%)	17 (18.0%)	14 (14.8%)
Had difficulty falling asleep, staying asleep	52 (55.3%)	18 (19.1%)	14 (14.8%)	10 (10.6%)
Been feeling hopeless about the future	38 (40.4%)	20 (21.2%)	28 (29.7%)	8 (8.5%)
Been feeling blue	37 (39.3%)	40 (42.5%)	11 (11.7%)	6 (6.3%)
Been feeling no interest in things	62 (65.9%)	14 (14.8%)	15 (15.9%)	3 (3.1%)
Had feeling of worthlessness	59 (62.7%)	23 (24.4%)	7 (7.4%)	5 (5.3%)
Thought about to commit suicide	78 (82.9%)	11 (11.7%)	5 (5.3%)	0 (0%)
Had difficulty concentrating	73 (77.6%)	12 (12.7%)	7 (7.4%)	2 (2.1%)

According to **Figure I**, the statistics of the two groups differ noticeably; those with a diagnosis of depression report far higher rates of symptoms such as suicidal thoughts, low energy, hopelessness, and worthlessness. Since people with depression reported more frequent issues with sleep, food, and concentration, the graph also emphasizes how depression affects day-to-day functioning. These findings demonstrate how important it is to recognize and address depressive symptoms to improve the health of individuals affected.

FIGURE I: Patients response on each item on the HANDS



DISCUSSION

Parkinson's Disease (PD) casts a long shadow over the lives of millions, with its tremors and rigidity often accompanied by an unseen companion: Major Depressive Disorder (MDD). This invisible burden can significantly impact patients' quality of life yet remains underexplored. These results show how crucial it is to identify and treat depression symptoms to enhance the health of those who experience them[11]. This study looked at the prevalence of depression and other risk factors in the Parkinson's disease (PD) Patients in Lahore's outpatient medical clinics. The importance of routine depression screening and treatment has been underlined from time to time again because depression is one of the frequent incapacitating symptoms of Parkinson's disease[12]. However, very little is known about the factors that influence depression severity or the nature of specific depression symptoms in PD. Almost all studies have found PD characteristics to be associated with depression severity[13].

It was discovered that the length of illness had a very substantial impact[10]. Because we anticipated that depression would be more likely to arise in the early stages following the diagnosis of either of the index diseases, we separated the length of illness into three categories: less than five years, between five and ten years, and more than ten years[2]. Early on, after the diagnosis is made, the psychological response or discomfort that comes with knowing that one has an illness that is expected to last a lifetime and that causes some handicaps and limitations in day-to-day functioning is likely to manifest[14]. We wanted to see if patients with Parkinson's disease still had a higher chance of getting depression following this initial phase. It should be emphasized that we are estimating the time after diagnosis, rather than the time when the illness first appears[15]. The beginning of PD is subtle. It is reasonable to expect that learning that one has Parkinson's disease (PD) has a greater psychological impact than learning that one has osteoarthritis (or even diabetes) [16]. If so, it could (partially) account for the elevated risk during the initial phase after diagnosis but not for the elevated risk later in the illness. We discovered that, albeit to a lesser degree, the risk of receiving a diagnosis of depression remained elevated five years after the diagnosis. This data suggests that persons with Parkinson's disease may be more susceptible to depression than just psychological reactions[17,18].

The conclusion that female PD patients experience depressed episodes of greater intensity than male patients is consistent with the discovery that Cummings examined and addressed, suggesting that the female gender, in general, is a risk factor for depression in PD[10]. Two recent investigations found a trend but did not corroborate it [5,19]. According to recent research on PD patients in nursing homes, women were more likely than males to experience depressive symptoms[20]. In one of the studies, the population was quite significant (more than 24,000 nursing home residents with PD in five states of the USA). However, the results were limited to those residing in nursing homes. The fact that a significant sample is required to demonstrate the influence of gender and that it is not particularly strong could be the cause of the differences between research. Both the current study, which was hospital-based and involved incident cases in the German community, and the study by **Lemke M et al**. provided examples of this principle[21]. **Shehata G and colleagues**[19] discovered that the depressive profiles of depressed PD patients differed from those of depressed patients without PD. They showed much-reduced sadness, anhedonia, guilt feelings, energy loss, and attention issues. The rates of depression in this sample are significantly higher than those reported by the National Comorbidity Survey (NCS), which revealed that the 1-year prevalence estimations for mood swings were 9.5% (for non-PD individuals), even though there was no control group. We cannot completely rule out that the rates are not specific to Parkinson's disease or that they are comparable to those of other disorders[22]. Although depression is not always brought on by Parkinson's disease, depressive symptoms appear to be more frequent in PD patients than in other neurogenerative disorders.

CONCLUSION

A Significant number of Parkinson's disease patients suffer from major depression symptoms. Many clinical and socio-demographic characteristics, such as PD stage and functional impairment, were substantially correlated with depression, which was primarily mild to moderate in severity. Additionally, because those with more severe cognitive impairment are more likely to experience depression, it is recommended that the depression should be appropriately recognized and treated early as patients show mild symptoms.

Limitations

This study is limited by its cross-sectional design, which prevents the establishment of causality. The sample size is relatively small, and data were collected from a single tertiary care centre, which may limit generalizability. Self-reported measures may also introduce response bias.

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AUTHOR CONTRIBUTION

Minhas FY:	Conceived the literature search, study design
Rasool J:	Data acquisition, questionaire design
Raza M:	Data acquisition, analysis
Afzal HMI:	Interpretation of data, overall supervision,
Iqbal S:	Statistical analysis
Chaudhary S:	Data collection, manuscript drafting

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