Original Article

Cognitive Deficits in Patients of Depressive Disorder

Muhammad Ilyas Jat, Ali Bux Rajper, Chooni Lal, Washdev

ABSTRACT

OBJECTIVE: To determine the frequency of cognitive deficits in patients of Depressive disorder.
METHODOLOGY: This cross-sectional study was conducted at Jinnah Post Graduate Medical Centre (JPMC), Karachi,from September 2018 to March 2019. The sample size of 250 was calculated through customary techniques, and the sampling technique was non-probability consecutive sampling. Those patients who were diagnosed with cases of depressive disorder were enrolled in the study. The data were analyzed using SPSS (Statistical Packages of Social Sciences) version 22.0.
RESULTS: Out of the total of 250 cases, 114 (45.60%) were males, and 136 (54.40%) were females with an average age of 33.62±11.07 years. Among 250, the majority, 178 (71.20%), were married and Illiterate 90 (36.00%). Among all participants, 136 (54.4%) belonged to middle socio-economic and 120 (68.0%) were household by occupation. Out of 250 cases, 135 (54%) were drug naïve, while 114 (45.6%) were on active treatment. Cognitive dysfunction was present among 169 (67.6%). Educational status, treatment status, and duration of diseases were considerably related, with cognitive dysfunction having a p-value of less than 0.05.
CONCLUSION: The rate of Cognitive dysfunctions among patients with depressive disorder is high and alarming.

KEY WORDS: Cognitive deficits, Depressive disorder, Frequency, Patients, Perceived Dysfunction Questionnaire, Score.

This article may be cited as: Jat MI, Rajper AB, Lal C, Washdev. Cognitive Deficits in Patients of Depressive Disorder. J Liaquat Uni Med Health Sci. 2022;21(01):60-4.
doi: 10.22442/jlumhs.2022.00885.

INTRODUCTION

Depressive disorder is a typical mental disorder and one of the primary sources of inability around the globe. This disorder worldwide1 influences an expected 350 million individuals. It is portrayed by depressed mood, lack of enjoyment, decreased activity, negative thoughts, and reduced concentration (for at least two weeks)[2].The consequences of an overall audit brief that mean prevalence of the depressive disorder in a community populace of Pakistan is thirty-fourth (range 29-66% for young ladies and 10-33% for men)[3]. Hence it forms a substantial amount of morbidity in this community population. Depressive disorder is a multidimensional psychiatric disorder that affects different domains of the human mind, especially cognition, affecting patients' personal, social and occupational life. This aspect is so crucial that it has been included in the diagnostic criterion of depressive disorder in Diagnostic and Statistical Manual-5 (DSM-5) and International Classification of Diseases-10 (ICD-10)[4,5]. Past examinations in the local situation have indicated that cognitive disturbance happens frightfully regularly in depressed patients, as much as 63.3%.[6] Another investigation demonstrated that cognitive trouble overwhelmed the course of depressive disorder and was available from 85 to 94 percent in discouraged subjects; these side effects were likewise announced generously in 39 to 44 percent in times of remission[7]. Yet in another study, cognitive dysfunctions persisted in patients, as several as seventy-one percent of patients experiencing residual symptoms of decreased concentration/decision making.[8] Residual manifestations, as intellectual troubles, are identified with a greater danger of backsliding among patients with Major Depressive Disorder (MDD)[9]. These side effects may also predict disabled life work and work productivity[10]. Accordingly, improvement in psychological capacities is a significant endpoint of upper treatment as it is typically ignored in clinical practice. In aggregate, MDD is related to noteworthy impedances in all neuropsychological parts of psychological capacities. Patients with MDD additionally have more slow handling speed; engine easing back alone can't represent this results[11].

It is discouraging to see that insufficient data of any related research could be found after the careful literature review in our country; this creates a high need for this research to verify the frequency of cognitive dysfunctions in patients with depressive disorder. It can help sensitize the mental health professionals to keep an eye on this aspect of illness so that early intervention can improve the quality of life and devise better management strategies according to local needs.

METHODOLOGY

This study work was directed at the psychiatry out-patient department (OPD) of the Jinnah Postgraduate Medical Center (JPMC), Karachi, from September 2018 to March 2019, and contained patients with Depressive disorder. Ethical approval was taken from Institutional Review Board (IRB). Patients were selected utilizing a standard sample figuring recipe. Non-likelihood back-to-back inspecting was done. Patients with Depressive disorder between the 18-60 age range and having moderate to serious disorder were incorporated. Those clients who have any known organic physical illness causing a cognitive disturbance, patients suffering from co-morbid chronic illnesses, psychiatric disorders other than depressive disorders, and depressive disorder with psychotic features were rejected from the study. Patients using any psychoactive substance use were also excluded from the study. Intellectual permission was acquired from patients after advising them in basic and justifiable language about the motivation behind the investigation, guaranteeing them privacy and perceiving their entitlement to pull out the assent whenever, even without referencing any purpose behind that. Depressive disorder was assessed based on ICD-10 (International Classification of diseases). Cognitive Dysfunctions mean disturbance in memory, learning, concentration, attention & executive functions. Cognitive dysfunctions were measured using a validated Psychometric scale: Perceived Dysfunctions Questionnaire-5 (PDQ-5). Minimum score: 0, Maximum score: 20.

Patients with a score of >10 were taken as positive for cognitive dysfunctions. A semi-organized proforma was utilized to indicate segment subtleties of the patients, and the information was dissected on SPSS 22. The recurrence and rate were determined for subjective factors like sex, cognitive dysfunction, marital status, instructive status, word-related status, and reference method. Mean and standard deviation (SD) were determined for age.

RESULTS

Among all250clients, 114 (45.60%) were males, 136 (54.40%) were females, and most of the patient's age range was between 26 to 54 years. Among all 178 (71.20%) were married, 55(22.00) were single, 6 (2.40%) were widows, and 11(4.40%) were separated/ divorced. The majority of patients were Illiterate 90 (36.00%), 10(4.00%) were literate up toreligious studies while 34(13.60%) were literate for primary and 37(14.80%) were educated till middle, and 35 (14.00%) were matriculated, 36(14.40%) were intermediate, and 08(3.20%) were graduated. Among all participants, 44(18.4%) belonged to the lower socio -economic class, and 136(54.4%) were tothe middle socio-economic class, while 68(27.20%) belonged to the upper-middle class. Among 250 patients, 16(6.4%) were jobless, 17(6.8%) were students, 120(68.0%) were household, 30(12%) were skilled professionals, and 55(22%) were unskilled professionals. In contrast, 12(12.8%) were retired as shown in **Table I**. Overall 169 (67.6%) patients were having cognitive dysfunction and 81 (32.4%) were not having cognitive dysfunction as per Perceived Cognitive Dysfunction questionnaire as shown in **Table II**. The cognitive dysfunction questionnaire score was as 40 (16%) were those who had no cognitive dysfunction and scored 0-4, while 89 (35.6%) were those who scored 5 -10. Mild cognitive impairment and 87 (34.8%) were moderate type cognitive dysfunction, and 34 (13.6%) had severe cognitive dysfunction, as shown in **Table III**. Educational status, treatment status, and duration of diseases were significantly related with cognitive dysfunction having p-value of less than 0.05, as shown in **Table IV**.

TABLE I: DEMOGRAPHIC CHARACTERISTICS

Demographic Characteristics	n (%)
Marital status	
Single	55 (22.00)
Married	178 (71.20)
Widow	6 (2.40)
Separated/Divorced	11 (4.40)
Education status	
Illiterate	90 (36.00)
DeeniTaleem	10 (4.00)
Primary	34 (13.60)
Middle	37 (14.80)
Matric	35 (14.00)
Intermediate	36 (14.40)
Graduate	08 (3.20)
Occupation status	
Jobless	16 (6.40)
Student	17 (6.80)
Household	120 (68.00)
Skilled Professional	30 (12.00)
Unskilled Professional	55 (22.00)
Retired	12 (12.80)
Economic Status	
Lower Class	44 (18.4)
Middle Class	136 (54.4)
Upper middle class	68 (27.20)

TABLE II: COGNITIVE DYSFUNCTION

Cognitive Dysfunction	Frequency	Percent %
Yes	169	67.6
No	81	32.4

TABLE III: PERCEIVED DYSFUNCTION QUESTIONNAIRE SCORE

PDQ-5 Score	Frequency	Percent%
0-4	40	16.0
5-10	89	35.6
11-15	87	34.8
16-20	34	13.6
Total	250	100%

TABLE IV: STRATIFICATION OF COGNITIVE DYSFUNCTION WITH DURATION OF DISEASE, EDUCATIONAL STATUS, AND TREATMENT STATUS

Duration of disorder	Cognitive dysfunction		Total	P-value
	Yes	No		
4 weeks	15(71.4%)	6 (28.6%)	21(100%)	0.026
More than 4 weeks	154(67.2%)	75(32.8%)	229(100%)	
Treatment Status				
Drug Naïve	99(73.3%)	36(26.7%)	135(100%)	0.018
Active Treatment	69(60.5%)	45 (39.5%)	114(100%)	
Remission	1 (100%)	0	1 (100%)	
Educational Status				
Illiterate	74(82.2%)	16 (17.8%)	90(100%)	0.000
Religious studies	5 (50.0%)	5 (50.0%)	10 100%)	
Primary	24(70.6%)	10 (29.4)	34(100%)	
Middle	18(48.6%)	19 (51.4%)	37(100%)	
Matric	25(71.4%)	10 (28.6%)	35(100%)	
Intermediate	16(44.4%)	20 (55.6%)	36(100%)	
Professional	7 (87.5%)	1 (12.5%)	8(100 %)	

DISCUSSION

The cognitive deficits in this study are 67.6% as per Perceived Cognitive Dysfunction Questionnaire. The association of depression with cognitive deficits has been demonstrated in several studies[12]. In previous studies from Pakistan, the results are the same as in the current research, and this study showed the frequency of cognitive deficits 67.6%. A study conducted in drug-naive patients in Karachi, Pakistan, showed cognitive disturbance as 63.3%6. In contrast, another study suggested that cognitive symptoms dominate the course of depressive disorder and was present from 85 to 94% in patients with depressive disorder[7]. This study has shown a frequency of cognitive deficits of 67.6%, which is slightly lesser than recent research indicating 50% of cognitive deficits among cases of depressive disorders[13]. A large portion of the investigations has assessed the relationship between cognitive disturbance and depressive disorder in either grown-ups or youthful adults[14] or the older populace. The majority of patients in our study, who were taking treatment, or the individuals who were drug credulous experienced 'to some degree' to 'outrageous' issues with working, dealing with things, or keeping up social collaboration. Subsequently, patients with the significant burdensome issue on treatment can encounter a weakening of work, family life, and pleasurable exercises.

Additionally, these patients grumbled clinically applicable saw psychological brokenness as surveyed by a mean all-out PDQ-5 cut-off score of ≥10, which implies that intellectual brokenness may play employment in proper inability and the constraints of most possible medicines to deal with these. A pattern found inside the past Asian investigations and the current examination was that patients detailed more unfortunate utilitarian results in "work/school" than in "public activity/relaxation" or "family/home life"[15]. This study indicated that the duration of depressive disorder is significantly associated with cognitive disorders, as indicated in previous work showing an efficient audit assessing clinical progression in depressive disorders, including MDD, proposed that cognitive capacity is related to the length and number of earlier episodes. Unipolar melancholy has likewise been discovered to be associated with an expanded danger of creating dementia, ordinarily comprehended as the end phase of progression of intellectual disturbances[16].A recently studied systematic review has shown that early cognitive changes as a predictor of treatment response in individuals with MDD, early changes in cognitive functioning were demonstrated to have a predictive effect on treatment response[17]. This study indicated a significant push of cognitive symptoms among cases of depressive disorder. The same was depicted in earlier studies showing that cognitive impairment has been reported to affect function independent of mood symptoms, correlated with functional impairments, and may be of greater relevance to overall health outcomes[18].

In comparing cognitive dysfunction as 67.6% among individuals with depressive disorder is more than that from the Spanish sample (9.6%)[19]. The difference is evident that previous studies had done in a specific population, and the current study involves all the individuals with depression. A study in our neighboring country, India, Lucknow, reported that the prevalence of cognitive dysfunction was 7.6%. The relatively lower prevalence is because of the rationale that the study involves a small cluster of specific population[20.] Similar to alternative studies[21], we generally experience a superior pervasiveness of psychological dysfunctions with expanding age in our examination.

Notwithstanding the away from depressive disorder, intellectual brokenness is anyway to be acknowledged as a treatment focus for depression. In an ongoing study, the vast majority of the patients with a background marked by wretchedness had the significant effect of intellectual weaknesses in their

everyday living exercises. Be that as it may, exclusively 50% have ever been asked concerning psychological brokenness by expert medical services proficient. One of the most focuses identifying with the investigation into new mediations is the need for change in preliminary styles to fuse intellectual results. In outline, intellectual side effects and shortfalls in depressive disorder might be an imperative side and identified with minor good working, presents a hazard for backslide and endures in any event, when disposition manifestations recuperate.

CONCLUSION

The rate of Cognitive dysfunctions among patients with depressive disorder is high and alarming. This conclusion emphasized the need to give awareness to the public about the psychiatric illnesses as well as early detection and treatment of these patients, so that the morbidity could be decreased. These impairments may negatively impact work productivity for individuals with depression. Further research is necessary to explore these impairments in cognition among persons with depression.

Limitations: This single-center and hospital-based study cannot be generalized to the general public.

Acknowledgment: Dr. Michael Sullivan, Ph.D. (Department of Psychology, Medicine and Neurology, Canada Research Chair in Behavioral Health McGill University), is highly appreciated for his generous permission to use PDQ-5 in this work.

Ethical permission: Jinnah postgraduate medical Centre Karachi letter No.F.2-81-IRB/2018-GENL/2649/JPMC, dated 03-09-2018.This article has been extracted from the dissertation to the College of Physicians and Surgeons Pakistan.

Conflict of Interest: There is no conflict of interest among the authors

Financial Disclosure / Grant Approval: There was no funding agency.

Data Sharing Statement: The data supporting this study's findings are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions

AUTHOR CONTRIBUTIONS

Jat MI: Results and discussion writing
Rajper AB: Concept of idea, data collection, data analysis, results writing
Lal C: Manuscript editing and final approval
Washdev: Discussion writing and manuscript and editing

REFERENCE

1. Depression [Internet]. World Health Organization. 2016 [cited 25 May 2016]: http://www.who.int/mediacentre/factsheets/fs369/en/
2. Mirza I, Jenkins R. Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: systematic review. BMJ. 2004; 328 (7443): 794. doi: 10.1136/bmj.328.7443.794.
3. Cowen P, Harrison P, Burns T. Shorter Oxford textbook of psychiatry. Oxford: Oxf Univ Press; 2012.
4. Diagnostic and statistical manual of mental disorders. Washington, D.C.: American Psychiatric Association; 2013.
5. Organization WH. The ICD-10 Classification of Mental and Behavioral Disorders: Clinical Descriptions and Diagnostic Guidelines. Geneva: World Health Organization; 1992.
6. Afridi MI, Hina M, Qureshi IS, Hussain M. Cognitive disturbance comparison among drug-naïve depressed cases and healthy controls. J Coll Physicians Surg Pak. 2011; 21(6): 351-5.
7. Conradi HJ, Ormel J, De Jonge P. Presence of individual (residual) symptoms during depressive episodes and periods of remission: a 3-year prospective study. Psychol Med. 2011; 41(6): 1165-74.
8. McClintock SM, Husain MM, Wisniewski SR, Nierenberg AA, Stewart JW, Trivedi MH et al. Residual symptoms in depressed outpatients who respond by 50% but do not remit to antidepressant medication. J Clin Psychopharmacol. 2011; 31(2): 180-6. doi: 10.1097/JCP.0b013e31820ebd2c.
9. Judd LL, Akiskal HS, Maser JD, Zeller PJ, Endicott J, Coryell W et al. Major depressive disorder: a prospective study of residual sub-threshold depressive symptoms as predictor of rapid relapse. J Affect Disord. 1998; 50(2-3): 97-108. doi: 10.1016/s0165-0327(98)00138-4.
10. Fehnel S, Forsyth B, Di Benedetti D, Danchenko N, François C, Brevig T. Patient-centered assessment of cognitive symptoms of depression. CNS Spectr. 2013; 21(01): 43-52. doi: 10.1017/S1092852913000643.
11. Jaeger J, Berns S, Uzelac S, Davis-Conway S. Neurocognitive dysfunctions and disability in major depressive disorder. Psychiatry Res. 2006; 145(1): 39-48. doi: 10.1016/j.psychres.2005.11.011.
12. Marazziti D, Consoli G, Picchetti M, Carlini M, Faravelli L. Cognitive impairment in major depression. Eur J Pharmacol. 2010; 626(1): 83-86. doi: 10.1016/j.ejphar.2009.08.046.
13. Cesare G, Monica F, Martina V, Francesca G, Bernardo D, Caterina AV et al. Duration of untreated illness and depression severity are associated with cognitive impairment in mood disorders. Int J Psychiatry Clin Pract. 2020; 24(3): 227-235. doi: 10.1080/13651501.2020.1757116.
14. Castaneda AE, Tuulio-Henriksson A, Marttunen M. A review on cognitive impairments in depressive and anxiety disorders with a focus on young adults. J Affect Disord. 2008;106(1-2):1-27.

doi: 10.1016/j.jad.2007.06.006.
15. Kim JM, Chalem Y, di Nicola S, Hong JP, Won SH, Milea D. A cross-sectional study of functional disabilities and perceived cognitive dysfunction in patients with major depressive disorder in South Korea: The PERFORM-K study. Psychiatry Res. 2016; 239: 353-61. doi: 10.1016/j.psychres.2016. 01.022.
16. Kessing LV, Andersen PK. Evidence for clinical progression of unipolar and bipolar disorders. Acta Psychiatr Scan. 2017; 135(1): 51-64. doi: 10.1111/acps.12667.
17. Park C, Pan Z, Brietzke E, Subramaniapillai M, Rosenblat JD, Zuckerman H et al. Predicting antidepressant response using early changes in cognition: a systematic review. Behav Brain Re. 2018; 353: 154-60. doi: 10.1016/j.bbr.2018.07. 011.
18. McIntyre RS, Lee Y. Cognition in major depressive disorder: A Systemically important functional index (SIFI). Curr Opin Psychiatry. 2016; 29(1): 48-55. doi: 10.1097/YCO.000000000 0000221.
19. Lara E, Koyanagi A, Olaya B, Lobo A, Miret M, Tyrolvolas S et al. Mild cognitive impairment in a Spanish representative sample: prevalence and associated factors. Int J Geriatr Psychiatry. 2016; 31(8): 858-67. doi: 10.1002/gps.4398.
20. Tiwari SC, Tripathi RK, Kumar A, Kar AM, Singh R, Kohli VK et al. Prevalence of psychiatric morbidity among urban elderlies: Lucknow elderly study. Indian J Psychiatry. 2014; 56(2): 154-160. doi: 10.4103/0019-5545.130496.
21. Chen S, Conwell Y, Vanorden K, Lu N, Fang Y, Ma Y et al. Prevalence and natural course of late-life depression in China primary care: a population -based study from an urban community. J Affect Disord. 2012; 141(1): 86-93. doi: 10.1016/j.jad. 2012.02.027.

AUTHOR AFFILIATION:

Dr. Muhammad Ilyas Jat *(Corresponding Author)*
Assistant Professor, Department of Psychiatry
Dow Medical College, Dow University of Health Sciences
Karachi, Sindh-Pakistan.
Email: muhammad.ilyas@duhs.edu.pk

Dr. Ali Bux Rajper
Assistant Professor, Department of Psychiatry
Ghulam Muhammad Mahar Medical College
Sukkur, Sindh-Pakistan.

Dr. Chooni Lal
Associate Professor, Department of Psychiatry
Jinnah Postgraduate Medical Centre
Karachi, Sindh-Pakistan.

Dr. Washdev
Assistant Professor, Department of Psychiatry
Dow International Medical College
Dow University of Health Sciences
Karachi, Sindh-Pakistan.