



Association of Depression and Anxiety Among Caregivers of Schizophrenic Patients Attending a Tertiary Care Teaching Hospital in Eastern Odisha: A Cross-Sectional Study.

¹Dr. Jamuna Das, ²Dr. Manika Bose, ³Dr. Sansita Parida,

¹PhD Research Scholar, Research scholar, Department of Psychiatry, IMS and SUM Hospital, Siksha 'O' Anusandhan (Deemed to be University), K-8, Bhubaneswar, Odisha 751003.

²Associate Professor, MD, Department of Pharmacology, IMS and SUM Hospital, Siksha 'O' Anusandhan (Deemed to be University), K-8, Bhubaneswar, Odisha 751003.

³Professor, MD, Department of Pharmacology, IMS and SUM Hospital, Siksha 'O' Anusandhan (Deemed to be University), K-8, Bhubaneswar, Odisha 751003.

Corresponding Author

Dr. Manika Bose, Associate Professor, MD, Department of Pharmacology, IMS and SUM Hospital, Siksha 'O' Anusandhan (Deemed to be University), K-8, Bhubaneswar, Odisha 751003.

(Received: 11 June 2024

Revised: 16 July 2024

Accepted: 10 August 2024)

KEYWORDS

Depression,
Anxiety,
caregivers,
Schizophrenia,
Psychological
well-being.

ABSTRACT:

Background: Schizophrenia is characterized by disordered thoughts or experiences, with disorganized speech or behavior and decreased involvement in daily activities. Primary caregivers of Schizophrenic patients encounter extensive challenges that create psychological and financial stress and can deteriorate the family functioning. The study aims to explore the magnitude of the association between depression and anxiety among caregivers of schizophrenic patients.

Method: A cross-sectional study design was employed among 80 primary caregivers of Schizophrenic patients attending the tertiary care teaching hospital of Eastern Odisha. Participants (n = 80) were approached in in-patient and out-patient units. Out of 80 study participants, 40 were male and 40 were female, respectively. Both groups were screened for depression and anxiety using the Hamilton Rating Scale for Depression (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A). Diagnosis of Depression and Anxiety Disorders was made according to DSM-5 criteria.

Results: Statistical analysis was done using the SPSS 25 version. Significant differences were found in the subscales of HAM-D and HAM-A using the student's t-test and a significant relationship was found between the two subscales by Pearson's correlation analysis. The proportion of depression in females (19.95%) is higher than in males (17.15), and anxiety levels are also higher in females (17.45) as compared to males (13.03). There is also a significant positive relationship between depression and anxiety among the male and female caregivers of schizophrenic patients ($r=0.497$, $P<0.001$). Thus, it was found that female caregivers were affected more than males.

Conclusion: Caregivers of patients with severe mental diseases such as Schizophrenia experience high levels of depression and anxiety. Appropriate psychological intervention in the form of attending seminars, workshops, and counseling should be targeted to improve the psychological well-being of caregivers, and a need for extensive study to tailor the modalities of various types of intervention.



INTRODUCTION

Schizophrenia is a chronic and severe mental disorder that affects millions worldwide, placing a significant burden not only on the individuals diagnosed but also on their caregivers [1]. Schizophrenia is a disorder that affects a person's ability to think, feel, and behave clearly. It is characterized by disordered thought processes and perception, a sense of self, and experiences faced by closed ones such as psychosis, delusions, and hallucinations. Hence, Schizophrenia involves a range of psychological, behavioral, and cognitive symptoms. According to the current Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), the prevalence of Schizophrenia was 1 in 300 people worldwide. Studies have shown that psychic disorders have a higher prevalence in early to mid-life, typically appearing earlier between 15-20 years in young adult men and between 20-30 years in women. Interpersonal relationships among the individual get impaired enough to prevent marriage and later procreation. These individuals are usually denied personal and social adulthood benefits, cause psychosis, and may affect all areas of life, including personal, social, educational, and occupational functioning. There is a social stigma, discrimination, and violation of human rights with such patients. More than two out of three people with mental illness in the world do not receive specialist care.

Since it is a complex and long-term medical illness that affects a person's psychosocial behavior they need isolation from family and society. They are difficult to handle for which caregivers are needed and are indirectly affected both physically and psychologically[2]. The caregivers of schizophrenia patients are always disturbed and life is spent with worries, and are mentally depressed [3]. Caregivers, are often family members and are crucial in supporting patients through various stages of illness, including managing symptoms, medication adherence, and facilitating daily living activities. However, this role comes with immense psychological, and physical stress, leading to adverse health outcomes for the caregivers themselves[4,5]. Several studies have found that caregivers of schizophrenic patients are highly susceptible to developing depression and anxiety due to the demanding and unpredictable nature of their caregiving responsibilities[6]. The emotional toll of

witnessing a loved one struggle with a debilitating mental condition, combined with social isolation, stigma, financial strain, and the lack of adequate support systems, can lead to chronic stress [7]. This often results in a vicious cycle where the caregiver's mental health deteriorates, further impairing their ability to provide effective care. The caregiver of a schizophrenic should always be attentive to the patient because they are more hostile and are harmful to their own as well as to others. Sometimes, the patient also harms the caregivers. So, the individual is bound to be under constant stress for them. Due to the kind of job, they cannot get proper sleep or food. In due course of time, lack of sleep and food may lead to weight loss, anxiety, and irritation[8]. Sometimes they have difficulties in handling both side responsibilities and get irritated, anxious, and depressed. [9].

Understanding the association between depression and anxiety among caregivers is essential for developing targeted interventions to alleviate their distress. This study aims to explore the association between depression and anxiety among caregivers of schizophrenic patients. It is difficult to manage one's own life with the responsibilities of a mentally ill patient, but it is too hard for working caregivers to manage both side responsibilities. The level of burden is equivalent to the burden experienced by the families of patients with neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, and other neurological debilitating conditions.

Objectives: To find out the differences between depression and anxiety among male and female caregivers of schizophrenia patients and to assess the association between depression and anxiety and other associated factors among the caregivers of schizophrenic patients.

MATERIALS AND METHODS

Study Design: This cross-sectional study was carried out in both the inpatient and outpatient departments of Psychiatry at IMS and SUM Hospital, Bhubaneswar, located in Eastern Odisha. The study utilized a descriptive cross-sectional design to assess the levels of depression and anxiety among caregivers of individuals with schizophrenia. A total of 40 male and 40 female caregivers were selected through purposive sampling. The Hamilton Rating Scale for Anxiety and the



Hamilton Rating Scale for Depression were used to screen participants for anxiety and depression.

Study Duration -It was carried out for 10 months.

Samples size: The sample size for this cross-sectional study was determined using the formula $n = 4pq/l^2$, where p represents the prevalence of stress among caregivers of schizophrenia patients, $q = 100 - p$, and l is the allowable error. With a prevalence of stress among primary caregivers of individuals with schizophrenia at 5.39%, a 95% confidence interval, and an absolute precision of 5%, the minimum required sample size was calculated to be 80 primary caregivers. The study included 80 primary caregivers who regularly accompanied patients diagnosed with schizophrenia during their follow-ups in the outpatient and in-patient departments of IMS & SUM Hospital, Bhubaneswar. For the purposes of the study, the caregiver was defined as the family member who was primarily responsible for providing care throughout the illness and treatment period. Over the study period, 80 patients with schizophrenia were admitted, resulting in a sample of 80 caregivers from both in-patient and outpatient settings. Socio-demographic details were collected, and participants were interviewed only once during the study.

Inclusion Criteria: Includes participants who are:

1. From the age group 18 to 75 years old.
2. Taking care of a schizophrenic (as per the DSM-5 criteria) patient who is 18 years old or above
3. Taking care of a patient who is on medication and regular follow-up in the outpatient department for the past 6 months.
4. Caregiver of a schizophrenic patient who was in the active phase of illness
5. Living with the patient in the same environment for at least 12 months.

Exclusive Criteria:

- a) Caregivers of patients diagnosed with psychiatric disorders other than schizophrenia.
- b) Caregivers who themselves have been diagnosed with any major psychiatric disorder, including depression or anxiety, before becoming a caregiver.
- c) Caregivers with significant cognitive impairments or physical disabilities that would
- d) prevent them from completing the survey or interview process.

- e) Individuals who do not provide informed consent or are unwilling to participate in the study.
- f) Caregivers of patients with more than one person available to provide care.

Assessment tools

- a) The tool consists of two sections
- b) Socio-demographic data.
- c) Hamilton Rating Scale for depression and Hamilton Rating Scale for Anxiety

Socio-Demographic data: The demographic variables were collected through a written questionnaire, which included patient information such as name, age, gender, education, occupation, marital status, religion, duration of illness, time since first receiving treatment, duration of untreated illness, number of hospital admissions, and number of symptom-free episodes (lasting at least one month). Additionally, caregiver information was gathered, including name, age, gender, education, occupation, marital status, religion, relationship to the patient, and length of time spent caregiving.

Hamilton Rating Scale for Depression: The Hamilton Rating Scale for Depression (HRSD) consists of 21 items, each rated on various scales. The scoring categories are as follows: a score of 0-7 indicates no depression, 8-13 indicates mild depression, 14-18 reflects moderate depression, 19-22 indicates severe depression, and scores above 23 signify very severe depression[10]. The internal consistency coefficient for HAM-D is 0.88, and inter-rater reliability is 0.80-0.98.

Hamilton Anxiety Rating Scale: The Hamilton Anxiety Rating Scale (HAM-A) is used to assess the severity of anxiety symptoms. It includes 14 items, each representing a set of symptoms, and evaluates both psychic anxiety (mental agitation and emotional distress) and somatic anxiety (physical symptoms related to anxiety). Each item is rated on a scale from 0 (absent) to 4 (severe), with the total score ranging from 0 to 56. A score below 17 suggests mild anxiety, 18-24 indicates mild to moderate anxiety, and 25-30 reflects moderate to severe anxiety[11,12].



Before data collection, consent was obtained. This procedure was explained to each caregiver individually, with comfort and privacy maintained. Every caregiver regularly accompanies patients diagnosed as having schizophrenia as per the DSM-5 criteria. The caregivers were selected according to the inclusion and exclusion criteria. The caregiver group was screened for depressive and anxiety symptoms. The caregiver was explained about the purpose of the study and informed that their response would be kept confidential and used only for the study purpose. Studies being conducted by open-ended interviews with structured questionnaire responses were carefully recorded.

Statistical Analysis Socio-demographic characteristics of the caregivers were tested from the obtained data. All

the characteristics of caregivers and patients were analyzed through descriptive statistics, i.e., Mean, frequency, and percentage. Frequency was also obtained for depression and anxiety on the Hamilton rating scale. The Statistical Package for the Social Sciences 25 version (SPSS-25) was used to conduct analyses.

RESULTS

The present study aimed to examine the demographic variables of patients and their caregivers from tertiary care hospitals in Eastern Odisha. A total of 80 patients, of which 40 were males and 40 were females, met the DSM-5 criteria, and their primary caregivers were interviewed for the study.

Table: 1 Mean of demographic characteristics of caregiver schizophrenia patients (N=80)

Parameter	Characteristic	Frequency	Percentage
Age group	20-45	46	57.5
	46-75	34	42.5
Gender	Male	40	50
	Female	40	50
Marital status	Married	68	85
	Unmarried	12	12
Occupation	Housewife	36	45
	Govt. job	7	8.75
	Nurse	1	1.25
	Banker	1	1.25
	Student	4	5
	Farmer	18	22.5
	Businessman	13	16.25
Education	1st- 10th	44	55%
	11st to 12nd	28	35%
	Law	1	1.25%
	M.A	5	6.25%
	BSC	1	1.25%
	Nursing	1	1.25%
Relationships with patients	Mother	33	41.25
	Father	28	35
	Son	4	5
	Daughter	2	2.5
	Sister	5	6.25
	Brother	8	10
Income (monthly)	3000-12000	60	75%
	13000-22000	12	15%
	23000-32000	7	8.75%
	33000-42000	3	3.75%



Table 2 Frequency and Percentage Categories of Depression (HAM-D) among Caregivers of Schizophrenic patients

Depression categories	Frequency	Percentage	Mean	SD
Male	40	50%	17.15	5.72
Normal(0-7)	3	7.50%		
Mild to Moderate(8-16)	16	40%		
Moderate to Severe(17-23)	13	32.50%		
Severe(>24)	8	20%		
Female(N)	40	50%	19.95	5.7
Normal(0-7)	1	2.50%		
Mild to Moderate(8-16)	10	25%		
Moderate to Severe(17-23)	17	42.50%		
Severe(>24)	12	30%		
Age group(N)	80	100.00%	18.23	
20-45	46	57.50%	16.7	
46-75	34	42.50%	20.29	
Male(40) 20-45 age	25	31.30%	15.8	
Normal(0-7)	2	5%		
Mild to Moderate(8-16)	12	30%		
Moderate to Severe(17-23)	6	15		
Severe(>24)	5	12.50%		
46-75 age	15	18.80%	18.07	
Normal(0-7)	1	2.50%		
Mild to Moderate(8-16)	2	5%		
Moderate to Severe(17-23)	7	17%		
Severe(>24)	5	12.50%		
Female(40)	40	50%	19.8	
20-45 age	21	26.30%	17.76	
Normal(0-7)	1			
Mild-to-Moderate(8-16)	7			
Moderate to Severe(17-23)	8			
Severe(>24)	5			
46-75 age	19	23.80%	22.05	
Normal(0-7)	0			
Mild to Moderate(8-16)	3			
Moderate to Severe(17-23)	8			
Severe(>24)	8			



Table 3 Frequency and Percentage Categories of Anxiety (HAM-A) among Caregivers of Schizophrenia patients

Anxiety categories	Frequency	Percentage	Mean	SD
Male	40	50%	13.03	7.07
Normal (0-7)	4	10%		
Mild to Moderate (8-16)	25	62.50%		
Moderate to Severe (17-23)	4	10%		
Severe (>24)	7	17.50%		
Female (N)	40	50%	17.45	6.51
Normal (0-7)	3	7.50%		
Mild to Moderate (8-16)	14	35%		
Moderate to Severe (17-23)	13	32.50%		
Severe (>24)	10	25%		
Age group (N)	80	100.00%	14.61	
20-45	46	57.50%	14.35	
46-75	34	42.50%	14.97	
Male (40) 20-45 age	40	50.00%	12.22	
Normal (0-7)	25	31.30%	12.8	
Mild to Moderate (8-16)	3	7.50%		
Moderate to Severe (17-23)	10	25%		
Severe (17-23)	7	17.50%		
Severe(>24) 46-75 age	5	12.50%		
Normal (0-7)	15	18.80%	11.27	
Mild to Moderate (8-16)	1	2.50%		
Moderate to Severe (17-23)	5	12.50%		
Severe (>24)	7	17.50%		
Severe (17-23)	3	7.50%		
Female(40)	40	50%	17	
20-45 age	21	26.30%	16.19	
Normal(0-7)	2	5%		
Mild to Moderate(8-16)	9	22.50%		
Moderate to Severe(17-23)	6	15%		
Severe(17-23)	4	10%		
Severe(>24) 46-75 age	19	23.80%	17.89	
Normal (0-7)	1	2.50%		
Mild to Moderate(8-16)	10	25%		
Moderate to Severe(17-23)	7	17.50%		
Severe(>24)	1	2.50%		



Table 4 shows the frequency and percentage of association between anxiety and depression among total male and female caregivers of schizophrenic patients.

Variable	Mean	SD	DF	't'	r	P -value
Anxiety	15.24	7.11	79	19.24 't' value 2.91	0.5	P<0.01
Depression	18.55	5.85	79	28.33 't' value 2.19	0.5	P<0.01



Table 1 show that most patients were between 20-45 years old. The youngest caregiver was affected by 57.5%, and 45-75 years were affected by 42.5%. The sample had an equal gender distribution of male and female caregivers (n=80). Most caregivers were married (85%), and 15% were unmarried. The caregiver education from 1st – 10th class is 55%, and from class +2 to +3 is 35%. Most caregivers are housewives at 45%, and male caregivers are farmers (22.5%) and businessmen (16.25%). The monthly income of 90% of caregivers earns, ranging from the lowest in the table.

Table 2 indicates categories of depression among male and female caregivers. Female caregiver mean age 19.95 (SD=5.70) whereas male caregiver mean age 17.15(SD=5.72). Most of the male caregivers' highest proportion was between mild to moderate 40%, and moderate to severe 32.5%. Female caregivers' highest proportion was in the moderate to severe group 42.5% and 30% in the severe group in depression. The early adult age between 20-45 years group shows a high score(57.6%) of depression and between 46-75 years males 18.8%, and females 23.8% adult to old age suffering from depression, score 43.2%.

Table 3 also indicates the frequency and proportion of different categories of Anxiety among caregivers of schizophrenic patients. Female caregiver mean age was 17.45, SD=6.51, whereas in male mean age13.03, SD=7.07. Most of the male caregivers having anxiety were mild to moderate (62.5%) and greater than severe(17.5%), and female caregivers mild to moderate group was 35% and moderate to severe (32.5%) anxiety. Both age groups suffer from anxiety scores of mild to moderate and moderate to severe.

Table 4 indicates a significant and positive relationship between depression and anxiety between the male and female caregivers of schizophrenic patients ($r=0.497$, $P<0.001$). Thus, the patients suffering from depression and anxiety are 18.55% and 15.24%, respectively(both males and females). A positive relationship between the level of depression and anxiety among the caregivers of schizophrenic patients is seen. There is a significant difference in the level of depression and anxiety between male and female caregivers of schizophrenia patients.

DISCUSSION

Demographic characteristics indicate that most of the sample was young, unmarried, and unemployed. Also, most of them were married and were mothers. Several studies conducted in South -Asian countries indicated that caring for dependent family members has been the priority of mothers. In this study, we explored the association between depression and anxiety among caregivers of schizophrenic patients. The findings highlight the significant emotional toll that caregiving can bear, with high levels of both depression and anxiety being prevalent among caregivers. The results align with several studies that had consistently found higher rates of psychological distress among caregivers of patients with chronic mental illnesses like schizophrenia. A similar study was conducted at Kathmandu Medical College to assess caregiver burden among those caring for patients with schizophrenia and bipolar affective disorder.

The Beck Depression Inventory and Beck Anxiety Inventory were used to measure depression and anxiety, respectively. The study done by Sharma R et al had a total sample size of 100 caregivers. Results revealed that 72% of caregivers experienced high levels of stress, 25% showed signs of depression, and 29% had anxiety-related issues[13] whereas in our study 18.55% had depression and 15.24% had anxiety. Similarly, the findings of Ali Ei- Tantawy et al. revealed that depressive disorders were higher among caregivers (18.33%). The most common cause of depressive disorder among the caregivers group was adjustment issues. Depressive disorders were correlated with the burden of care and perceived stigma. Depressive symptoms were associated with an increased number of hours per week for providing care, the older age of the caregiver, and the duration of caregiving[14].

CONCLUSION

The present study provided enough evidence about the mental well-being of caregivers of schizophrenic patients to develop proper interventions to deal with their psychological problems. Therefore, this study highlighted the need for psychological counseling and education for caregivers. A patient's illness can increase the mental, physical, and financial burden on the primary caregivers, which tends to disturb their family stability. Integration of mutual support, psychoeducation, coping strategies conveyed within the



community, and awareness programs can bring down the primary caregiver's burden and boost their mental health.

Strengths of the study: Identifying the cut-off scores of burdens and managing appropriately help in coping with depression, and anxiety in follow-ups. This will help in the reduction of negative impacts (uncertainty, family disruption, etc.) among the primary caregivers of individuals with Schizophrenia. Also, by developing mutual support and education, the mental health of caregivers can be improved.

Limitations of the study: As the present study is a cross-sectional study, the causal relationship could not be established. It does not help to determine cause and effect in depth. Further study needs to focus on covering in-depth domains that are missed in our study. Another limitation of this study was that the participant sample was limited to the hospital. The caregivers' resilience level could not be assessed which would help in counselling. The study is also limited in the choice of the variables. A plethora of variables can be accommodated alongside depression and anxiety.

REFERENCES

1. Shamsaei F, Cheraghi F, Bashirian S. Burden on Family Caregivers Caring for Patients with Schizophrenia. *Iran J Psychiatry* 2015;10:239.
2. Moini J, LoGalbo A, Ahangari R. Schizophrenic disorders. *Foundations of the Mind, Brain, and Behavioral Relationships* 2024;305–17. <https://doi.org/10.1016/B978-0-323-95975-9.00019-6>.
3. Strunoiu LM, Strunoiu CM, Chirita AL, Pirlog MC, Tica AA. Factors that Impact Caregivers of Patients with Schizophrenia. *Curr Health Sci J* 2019;45:301. <https://doi.org/10.12865/CHSJ.45.03.09>.
4. Cruz E, Paré MA, Stan C, Voth J, Ward L, Taboun M. Caring for the caregiver: An exploration of the experiences of caregivers of adults with mental illness. *SSM - Qualitative Research in Health* 2024;5:100406. <https://doi.org/10.1016/J.SSMQR.2024.100406>.
5. Schulz R, Sherwood PR. Physical and Mental Health Effects of Family Caregiving. *Am J Nurs* 2008;108:23. <https://doi.org/10.1097/01.NAJ.0000336406.45248.4C>.
6. Lespine LF, Bohec AL, Dorey JM, Berbey CD, Lourioux C, D'amato T, et al. Caregiving-related experiences associated with depression severity and its symptomatology among caregivers of individuals with a severe mental disorder: an online cross-sectional study. *Eur Arch Psychiatry Clin Neurosci* 2023;273:887. <https://doi.org/10.1007/S00406-022-01451-3>.
7. Brandt L, Liu S, Heim C, Heinz A. The effects of social isolation stress and discrimination on mental health. *Transl Psychiatry* 2022;12. <https://doi.org/10.1038/S41398-022-02178-4>.
8. Kamil SH, Velligan DI. Caregivers of individuals with schizophrenia: who are they and what are their challenges? *Curr Opin Psychiatry* 2019;32:157–63. <https://doi.org/10.1097/YCO.0000000000000492>.
9. Reinhard SC, Given B, Petlick NH, Bemis A. Supporting Family Caregivers in Providing Care. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses* 2008.
10. HAMILTON M. A RATING SCALE FOR DEPRESSION. *J Neurol Neurosurg Psychiatry* 1960;23:56. <https://doi.org/10.1136/JNPN.23.1.56>.
11. Thompson E. Hamilton Rating Scale for Anxiety (HAM-A). *Occup Med (Chic Ill)* 2015;65:601–601. <https://doi.org/10.1093/OCCMED/KQV054>.
12. HAMILTON M. The assessment of anxiety states by rating. *Br J Med Psychol* 1959;32:50–5. <https://doi.org/10.1111/J.2044-8341.1959.TB00467.X>.



-
13. Sharma R, Sharma SC, Pradhan SN. Assessing Caregiver Burden in Caregivers of Patients with Schizophrenia and Bipolar Affective Disorder in Kathmandu Medical College.
 14. Tantawy A, Mohamed A, El-Tantawy A, Raya YM, Mohamed A-S, Zaki K. Depressive Disorders Among Caregivers of Schizophrenic Patients in Relation To Burden of Care and Perceived Stigma 2010.