

**SOCIODEMOGRAPHIC CORRELATES OF MENTAL HEALTH OUTCOME IN
CAREGIVERS OF PATIENTS WITH SCHIZOPHRENIA: A HOSPITAL -BASED CROSS
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ABSTRACT

Schizophrenia is a chronic mental illness and the caregivers of such patients do face physical and emotional disturbances while taking care of their patients. There may be different sociodemographic and clinical factors at play which may decide the mental health outcome of the caregivers. **Methodology:** A total of 190 caregivers of such patients with schizophrenia were enrolled in the study. Scales like PHQ-9, GAD-7 and PSS were used to assess depression, anxiety and stress in the caregivers. The relationship of sociodemographic factors like age, gender, marital status of caregivers and clinical factors like duration of caregiving, distance from hospital and hospitalization rate of the patients with levels of depression, anxiety and stress in caregivers was assessed. **Results and Discussion:** The mean score of PHQ-9, GAD-7 and PSS were 6.09 (SD = 4.69), 6.05 (SD= 4.27) and 16.51 (SD =7.27) respectively. Higher levels of anxiety were seen in female caregivers. Poor psychological outcome was seen in cases where the caregiver was a child, in joint families, longer duration and hours of caregiving, longer distance from hospital and higher hospitalization rate in the patient.

KEYWORD:- Schizophrenia, Caregiver, Depression, Anxiety, Stress.**INTRODUCTION**

Schizophrenia is a severe mental disorder that greatly impacts individuals diagnosed with the condition as well as their caregivers. Caregivers of individuals with schizophrenia often encounter significant psychological, emotional, and social challenges, which can affect their mental health and overall well-being. Factors such as age, gender, education, employment status, and marital status have been found to influence the mental health of caregivers in various contexts.^[1]

In India, the role of family in the caregiving process is particularly prominent due to cultural and social norms. Family members, especially women, are often expected to take on caregiving responsibilities, leading to substantial stress and mental health issues.^[2,3] However, there is a lack of research focusing on the specific sociodemographic factors that affect the mental health of caregivers of individuals with schizophrenia in the Delhi NCR region.

Understanding these sociodemographic factors is crucial for developing targeted interventions and support systems for caregivers. Prior studies have emphasized the need for comprehensive support structures addressing the multifaceted challenges faced by caregivers.^[4] This study aims to fill the existing research gap by examining the sociodemographic characteristics of caregivers and their association with mental health outcomes, with a specific focus on the Delhi NCR region.

This cross-sectional study aims to examine the mental health impacts on caregivers of individuals with schizophrenia in the Delhi NCR region, focusing specifically on sociodemographic factors. The results of this research are anticipated to provide valuable insights for the improvement of caregiver support programs and policies, ultimately enhancing the well-being of both caregivers and individuals affected by schizophrenia.

METHODOLOGY

It was a cross-sectional observational study that was carried out on the caregivers of patients with

schizophrenia who were visiting the department of psychiatry of a government medical college in New Delhi for consultation during the period of January 2023 to December 2023. Patients with a history of schizophrenia lasting more than 2 years were included in the study. The recruited caregivers were in the age group of 18-60 years. Caregivers were defined as individuals who lived with the patient and were intimately involved in the patient's care for a minimum duration of 1 year. This involvement included looking after the patient's day-to-day needs, ensuring medication intake, accompanying the patient during hospital visits, staying with the patient if admitted to the hospital, and maintaining liaison with the hospital staff.^[5] The sample size was determined to be 190 patients based on a schizophrenia prevalence of 1.41 per 1000 population,^[6] with an absolute error of 5%. Participants were recruited using a convenient sampling technique, and they provided written informed consent before enrolling in the study. The study was approved by the Institutional Ethical Committee of Lady Hardinge Medical College, New Delhi.

Tools used

- i. **Sociodemographic proforma:** This was a semi-structured proforma that included the demographic and clinical details of the patient and the caregiver.
- ii. **Patient Health Questionnaire-9 (PHQ-9):** It is a self-report tool for screening, diagnosing, and assessing depression severity, based on DSM-IV criteria. It consists of 9 questions about symptoms experienced in the last two weeks, rated on a 4-point Likert scale (0 to 3), with total scores ranging from 0 to 27. Severity is taken as more is the score obtained in this study. The PHQ-9 has high reliability, with a Cronbach's alpha over 0.80, and strong test-retest consistency. Its validity is well-established across diverse populations, making it a widely trusted tool in clinical and research settings.^[7]
- iii. **Generalized Anxiety Disorder -7 (GAD-7):** It is a brief self-report tool for assessing generalized anxiety disorder symptoms over the past two weeks. It consists of seven items scored on a four-point scale, with total scores ranging from 0 to 21. The tool has high internal consistency (Cronbach's alpha of 0.92) and strong test-retest reliability (intraclass correlation of 0.83), making it a reliable choice for clinical and research settings. The higher the score more is the severity of anxiety is taken in this study.^[8]
- iv. **Perceived stress Scale (PSS):** The instrument is designed to assess individuals' perceptions of life stress, consisting of 14 items that measure unpredictability, lack of control, and feelings of being overwhelmed. Respondents use a 5-point

Likert scale, yielding scores from 0 to 56; higher scores indicate greater perceived stress. A 10-item version is used in this study for brevity. The PSS demonstrates strong reliability, with internal consistency (Cronbach's alpha) usually above 0.80 and moderate test-retest reliability. Validity studies show significant associations with depressive symptoms, health issues, and behaviors like health service use. It is validated across diverse demographic groups, making it a reliable tool for assessing perceived stress in research and clinical settings.^[9]

Statistical analysis

The data collected was analyzed using IBM SPSS Statistics for Windows, Version 20 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to analyze the distribution of caregiver and patient characteristics. The categorical data of caregiver's socio-demographic characteristics and its relation with the mean scores of PHQ-9, GAD-7, and PSS-10 were analyzed using t-tests and ANOVA whereas the continuous data of clinical variables were analyzed using correlational analysis.

RESULTS

In this study, a total of 190 patients were included. The average age of the caregivers was 42.41 years (SD = 12.09), with a predominant male representation at 57.9% (n = 110) and a significant number being married at 76.8% (n = 146). The patients had a mean age of 36.08 years (SD = 11.53), with an equal distribution of males and females. Almost half of the patients (48.9%, n = 93) were unmarried, while 45.3% (n = 86) were married. Most participants belonged to nuclear families, accounting for 74.2% (n = 141). The primary relationship of caregivers to patients was as parents (32.1%, n = 61), followed by spouses (30.5%, n = 58) and siblings (23.2%, n = 44). A majority of caregivers (65.11%, n = 124) provided care for less than 1-2 hours daily, while 11.6% (n = 22) dedicated 6-8 hours each day. On average, caregivers traveled 32.63 km (SD = 57.7) to reach hospitals for treatment. Medication management was necessary in 64.7% of the cases (n = 123). A little over half of the patients (54.2%, n = 103) required hospitalization 1-2 times during the care period, while about one-third (34.2%, n = 65) received outpatient treatment. The average duration of caregiving was 6.79 years (SD = 5.94), and the average treatment duration for patients was 7.8 years (SD = 6.29). The most commonly diagnosed conditions among the patients were paranoid schizophrenia (61.1%, n = 116) and undifferentiated schizophrenia (31.1%, n = 59). PANSS scores for patients revealed: a mean positive scale score of 14.97 (SD = 6.94), a mean negative scale score of 17.36 (SD = 6.35), and a general psychopathology scale mean score of 34.06 (SD = 11.87). The caregivers reported mean scores of 6.09 (SD = 4.69) for depression, 6.05 (SD = 4.27) for anxiety, and 16.51 (SD = 7.27) for

perceived stress, as measured by the PHQ-9, GAD-7, and PSS. These results are presented in Table 1.

In our analysis of mental health issues among male and female caregivers, as indicated in Table 2, we found that female caregivers reported higher mean scores for depression, anxiety, and stress; however, these differences were not statistically significant. Caregiver age did not exhibit any significant correlation with mental health issues, as noted in Table 5. Additionally, married caregivers appeared to cope better with the demands of caregiving, displaying lower scores in depression, anxiety, and stress compared to their unmarried and separated counterparts. The differences related to marital status among caregivers were significant, particularly for depression and anxiety, as shown in Table 3.

When examining mental health problems across various caregiver relationship with patient categories, depicted in Table 4, we found that spouses and siblings experienced lower levels of anxiety, depression, and stress, whereas higher scores were observed among children and relatives of patients with schizophrenia. This distinction was significant for all mental health issues studied. Caregivers residing in joint families reported more severe mental health challenges, with significant differences noted particularly in anxiety and perceived stress, as illustrated in Table 2.

Analysis of caregiving hours and duration of caregiving revealed that caregivers who dedicated more time to their

roles experienced higher mean scores for mental health issues, with statistically significant differences in anxiety, depression, and stress as detailed in Table 4. The length of time spent caregiving also significantly affected caregivers' mental health, as shown in Table 5. A notably strong negative correlation was found between the duration of caregiving and the levels of anxiety, depression, and stress among caregivers.

Regarding the duration of schizophrenia, table 5 indicates that it did not influence the severity of mental health issues among caregivers. In contrast, the duration of treatment for patients with schizophrenia was significantly negatively correlated with the mental health problems experienced by their caregivers. Furthermore, when considering travel to hospitals for treatment and follow-up appointments, a significant positive correlation was observed between anxiety and depression and the distance traveled for these purposes. The extent of positive and negative symptoms in patients showed a strong positive correlation with the scores for anxiety, depression, and stress, as assessed by GAD-7, PHQ-9, and PSS rating scales.

Lastly, as shown in Table 3, the frequency of patient hospitalizations was significantly associated with the levels of anxiety, depression, and stress experienced by caregivers. Caregivers reported fewer mental health issues when patients had not been hospitalized compared to those with one or more hospital stays.

Table No. 1: Frequency distribution Sociodemographic and Clinical correlates of the study population.

Caregiver Age Mean (SD)	42.41 (12.09)
Caregiver Gender, n (%)	
• Male	110 (57.9%)
• Female	80 (42.1 %)
Marital Status of Caregiver, n(%)	
• Married	146 (76.8%)
• Unmarried	41 (21.6%)
• Separated	2 (1.1%)
• Widowed	1 (.5%)
Patients age Mean (SD)	36.08 (11.53)
Patient gender, n(%)	
• Male	95 (50%)
• Female	95 (50%)
Marital Status of Patient, n(%)	
• Married	86(45.3%)
• Unmarried	93 (48.9%)
• Separated	9 (4.7%)
• Widowed	2 (1.1%)
Family Type, n(%)	
• Nuclear	141 (74.2 %)
• Joint	49 (25.8%)
Relationship of Caregiver with patient, n(%)	
• Children	22 (11.%)

<ul style="list-style-type: none"> • Parent • Sibling • Spouse • Relatives 	61 (32.1%) 44 (23.2%) 58 (30.5 %) 5 (2.6%)
Time Spent in caregiving/day, n(%) <ul style="list-style-type: none"> • Less than 1 hours/day • 1-2 hours/day • 2-3 hours/day • 3-4 hours/day • 6-8 hours/day 	90 (47.4%) 34 (17.9 %) 21 (11.1%) 23 (12.1%) 22 (11.6 %)
Distance from Hospital (in kms) (Mean score, SD)	32.63 (57.7)
Supervision of medication by caregiver, n(%) <ul style="list-style-type: none"> • Yes • No 	123 (64.7%) 67 (35.3 %)
Hospitalization rate in patients, n(%) Not hospitalized <ul style="list-style-type: none"> • 1-2 times • 3-4 times • >4 times 	65 (34.2%) 103 (54.2%) 21 (11.1%) 01 (0.5 %)
Duration of Caregiving (in years) (Mean score, SD)	6.79 (5.94)
Duration of Treatment of Patients (in years) (Mean score, SD)	7.8 (6.29)
Type of Schizophrenia, n(%)	
<ul style="list-style-type: none"> • Paranoid • Hebephrenic • Catatonic • Undifferentiated 	116 (61.1 %) 2 (1.1%) 13 (6.8 %) 59 (31.1%)
PANSS Domains Score (Mean score, SD) <ul style="list-style-type: none"> • Positive Scale • Negative Scale • General Psychopathology Scale 	14.97 (6.94) 17.36(6.35) 34.06(11.87)
PHQ-9 score, Mean (SD)	6.09 (4.69)
GAD7 Score, Mean (SD)	6.05 (4.27)
PSS Score, Mean (SD)	16.51 (7.27)

SD: Standard deviation, PHQ 9= Patient Health Questionnaire 9, GAD7 = Generalized Anxiety Disorder 7, PSS = Perceived Stress Scale.

Table 2: Association of Caregivers' Gender and Type of family with mental health problems in the caregiver.

Mental Health Variable	Caregiver Gender			Type of Family		
	Male	Female	t-test p value	Nuclear	Joint	t-test p value
GAD 7 Mean Score (SD)	5.61 (4.10)	6.66 (4.45)	0.350	5.40 (3.79)	7.92 (5.02)	0.007**
PHQ9 Mean Score (SD)	5.55 (4.41)	6.84(4.99)	0.087	5.88 (4.58)	6.71 (5.02)	0.737
PSS Mean Score (SD)	16.28(7.14)	16.83 (7.47)	0.572	15.69 (7.54)	18.88 (6.20)	0.015*

*p value < 0.05, ** p value <0.01, PHQ 9= Patient Health Questionnaire 9, GAD7 = Generalized Anxiety Disorder 7, PSS = Perceived Stress Scale.

Table 3: Association of Caregivers' Marital and Hospitalization rate of patients with mental health problems in the caregiver.

Caregivers Marital status		Mean (SD)	ANOVA p value	Hospitalization of Patients	Mean (SD)	ANOVA p value
GAD7	Unmarried	7.56 (3.74)	<0.001**	Not hospitalized	4.32 (3.43)	<0.001**
	Married	5.51(4.21)		1 to 2 times	6.87 (4.22)	
	Separated	15.50 (0.71)		3 to 4 times	7.52 (5.30)	
	Widowed	5.0		>4 times	3.00	
PHQ9	Unmarried	8.07(5.59)	<0.001**	Not hospitalized	4.15(3.85)	<0.001**

PSS	Married	5.32(3.97)	0.149	1 to 2 times	7.00 (4.61)	0.003**
	Separated	19.0(2.83)		3 to 4 times	7.90 (5.56)	
	Widowed	12.0		>4 times	1.00	
	Unmarried	18.71(6.33)		Not hospitalized	13.89 (6.99)	
	Married	15.84(7.47)		1 to 2 times	17.60 (7.28)	
	Separated	19.0 (2.82)		3 to 4 times	19.00 (6.02)	
	Widowed	19.		>4 times	22.00	

*p value < 0.05, ** p value <0.01, PHQ 9= Patient Health Questionnaire 9, GAD7 = Generalized Anxiety Disorder 7, PSS = Perceived Stress Scale.

Table 4: Association of Caregivers' Relationship with patient and Time Spent in Caregiving/day with Mental Health Problems in the Caregiver.

Caregiver Relationship with Patient		Mean (SD)	ANOVA p value	Time spent in caregiving/ day	Mean (SD)	ANOVA p value
GAD7	Children	7.18 (3.66)	0.007**	< 1 hour	3.86 (2.87)	<0.001**
	Parent	6.40 (3.97)		1 to 2 hour	7.50 (4.74)	
	Sibling	6.00 (4.83)		2 to 3 hours	8.67 (4.05)	
	Spouse	4.84 (3.98)		3 to 4 hours	7.43 (4.41)	
	Relatives	11.20(3.77)		6 to 8 hours	8.86 (4.07)	
PHQ-9	Children	7.86 (5.37)	<0.001**	< 1 hour	3.84 (3.33)	<0.001**
	Parent	6.51(4.07)		1 to 2 hour	6.76 (4.33)	
	Sibling	5.52 (4.49)		2 to 3 hours	8.76 (5.68)	
	Spouse	4.83 (4.30)		3 to 4 hours	9.17 (4.47)	
	Relatives	13.00 (7.38)		6 to 8 hours	8.50 (4.92)	
PSS	Children	19.18 (4.73)	0.045*	< 1 hour	12.81 (6.99)	<0.001**
	Parent	17.56 (6.85)		1 to 2 hour	20.50 (7.54)	
	Sibling	16.11(7.82)		2 to 3 hours	19.76 (4.23)	
	Spouse	14.47 (7.89)		3 to 4 hours	18.52 (5.42)	
	Relatives	19.20 (1.64)		< 1 hour	3.86 (2.87)	

*p value < 0.05, ** p value <0.01, PHQ 9= Patient Health Questionnaire 9, GAD7 = Generalized Anxiety Disorder 7, PSS = Perceived Stress Scale.

Table 5: Correlation of clinical parameters with mental health problems in the caregiver.

Caregivers Details	GAD-7 Pearson correlation coefficient (p- value)	PHQ-9 Pearson correlation coefficient (p- value)	PSS Pearson correlation coefficient (p- value)
Caregivers Age (in years)	-0.126(0.084)	-0.100(0.171)	-0.073(0.314)
Duration of caregiving (in years)	-0.318(0.001)**	-0.246(0.001)**	-0.274(0.001)**
Duration of schizophrenia in patients	-0.134(0.064)	-0.082(0.259)	-0.092(0.206)
Duration of treatment of patients	-0.185(0.011)*	-0.186(0.010)**	-0.145(0.046)*
Distance from Hospital (in kms)	0.319(0.001)**	0.262(0.001)**	0.111(0.128)

*p value < 0.05, ** p value <0.01, PHQ 9= Patient Health Questionnaire 9, GAD7 = Generalized Anxiety Disorder 7, PSS = Perceived Stress Scale.

DISCUSSION

The complex relationship between caregiver demographics, the duration of caregiving, and the patient's clinical status significantly affects the caregiver's mental health.

In the current study, caregivers were predominantly middle-aged and married. Previous research indicates that gender influences anxiety, depression, and stress levels among caregivers, with females generally reporting higher levels of anxiety and depression than males, although the differences are not stark between the genders. Further studies have shown that female

caregivers, particularly mothers, often face more mental health challenges.^[10-12] This is due to the reasons that females are more likely to engage in caregiving activities due to their predominant role in nurturing. Additionally, the oxytocin hormone that is released during caregiving can lead to increased distress and a greater need to nurture, contributing to the heightened burden felt by the female caregivers. Women who care for patients with schizophrenia often face significant distress, as they must juggle the demands of supporting their loved ones with their own emotional and hormonal needs. Consequently, women tend to feel more overwhelmed than men when providing care for individuals with mental health

issues.^[13] However, research from India suggests that gender may not impact mental health in caregivers as much, possibly due to cultural dynamics where men are often the primary decision-makers, while women manage household responsibilities.^[14–16]

Marital status plays a crucial role in the mental health of caregivers; unmarried individuals report the highest levels of anxiety and depression, followed by those who are separated. Research suggests that married caregivers benefit from the emotional support of their partners, which helps alleviate the psychological burden of caregiving. On the contrary, unmarried and separated caregivers may lack this support, leading to elevated stress and emotional challenges.^[17,18] The predominance of married caregivers in the study suggests that marital support could provide some relief from stress, although caregiver challenges extend beyond just marital status.

Caregivers from joint families reported significantly higher anxiety and stress levels, likely due to greater caregiving demands, familial obligations, potential conflicts, and reduced privacy, all contributing to poorer mental health outcomes.^[19–21] In our study, spouses and parents acting as caregivers exhibited better mental health compared to children and other relatives, which may be attributed to their maturity and effective coping strategies while managing care for individuals with schizophrenia.^[22,23]

The amount of time spent caregiving and the duration of caregiving correlate directly with mental health outcomes. Greater time spent with the patient can limit caregivers' opportunities for self-care, thus increasing their burden in daily activities. Caregivers who dedicated more hours each day to caregiving reported increased levels of depression.^[24] The findings of this study aligns with past studies which highlighted that prolonged caregiving leads to heightened physical and emotional fatigue, leaving caregivers with minimal time for self-care.^[25,26] For caregivers who face longer distances to obtain treatment for their patients, higher anxiety and depression levels were reported in the current study. This is due to the fact that greater distances for travel were associated with increased logistical difficulties and limited support options, exacerbating their emotional distress. The distance inhibits their access to timely aid, fostering feelings of isolation and helplessness that can intensify a poor mental health outcome.^[22,27]

Interestingly, caregivers of patients who have experienced longer durations of schizophrenia and treatment duration in their patients reported lower anxiety and depression, possibly due to the caregivers' adaptation over time or the advantages of consistent treatment in stabilizing the patient's condition, which reduces immediate caregiving pressures. This adaptation may include developing coping strategies, becoming more informed about the illness, and utilizing support resources.^[28]

On the other hand, caregivers whose patients frequently required hospitalization reported heightened anxiety and depression. This mirrors earlier research suggesting that regular hospital admissions can intensify caregiver stress due to the unpredictability and interruption of daily life, along with worries about the patient's well-being.^[22,24,29] The strain from dealing with recurrent acute episodes and managing hospital arrangements can be overwhelming for caregivers, highlighting the need for interventions aimed at minimizing hospitalizations through improved outpatient care and community support services.

CONCLUSION

This study underscores the multifaceted challenges faced by caregivers of patients with schizophrenia. The significant impact of family structure, marital status, patient hospitalization rates, caregiver-patient relationship, and caregiving time on caregiver mental health highlights the need for comprehensive support systems. By addressing these factors through targeted interventions and policy initiatives, it is possible to alleviate some of the burdens on caregivers and improve their mental health and well-being.

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