Medical Science

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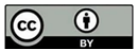E mail: ajinkyaghogaremd@gmail.com

DISCOVERY

SCIENTIFIC SOCIETY

Relationship between the caregiver burden and the resilience among primary caregivers of individuals suffering from schizophrenia attending tertiary care rural hospital from central India: A cross-sectional observational study

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ABSTRACT

Introduction: Schizophrenia is a chronic mental disorder prevalent across the globe. Because of its chronic course, most of the individuals with schizophrenia require lifelong treatment which may pose financial, physical, and mental burden over the primary caregivers. So, while taking care of the individuals with schizophrenia over a prolonged period, caregivers themselves can suffer from the burden in the form of depression, anxiety, and stress. *Objective:* To study the relationship between caregiver burden in the form of depression, anxiety and stress, and the resilience among the primary caregivers of individuals with schizophrenia. *Methodology:* Present cross-sectional study was carried out by the department of Psychiatry of a tertiary care rural teaching hospital from Maharashtra, India. Data were collected from 80 primary caregivers by using standard questionnaires like Depression, Anxiety and Stress – 21 item (DASS-21) scale to measure the caregiver burden and Brief Resilience Scale (BRS) to measure the levels of resilience. *Results:* Prevalence of depression, anxiety, and stress were 55%, 35%, and 48.7% respectively. Significant negative correlation was observed between resilience levels and depression (r= -0.23), anxiety (r= -0.35), and stress (r= -0.24), suggesting that the probability of the caregiver burden increases with decline in the level of resilience. *Conclusion:* Based on the findings, we recommend that regular individual as well as group sessions should be conducted for the primary caregivers to strengthen their resilience so that they can not only

effectively deliver the necessary care to the individuals with schizophrenia but can maintain their own mental health also.

1. INTRODUCTION

Schizophrenia is one of the chronic mental disorders prevalent across the globe. It is characterized by presence of delusions, hallucinations, disorganized behaviors, negative symptoms, and loss of contact with the reality. It is a disabling condition with varying degree of cognitive and psychosocial impairments. According to Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5), a total duration of six months is required for the diagnosis of schizophrenia (Lewis et al., 2017). The prevalence of schizophrenia in India was found to be 0.3% (Sagar et al., 2020). Primary caregiver or carer refers to a person who belongs to patient's everyday support system involving the patient's routine care and is in charge for the patient, and is the one who devotes a great part of her/his time to the task of caregiving without being paid (Caqueo-Urízar et al., 2009). Primary caregiver may provide care for a spouse, a child, a senior, a friend, or a family member suffering from a terminal or chronic illness who needs assistance in activities of daily living (Caqueo-Urízar et al., 2009).

Caregiver burden is defined as a negative impact of the person's mental disorder on his/her entire family or the caregiver (Singh & Prajapati, 2013; Shamsaei et al., 2013). Caregiver burden may be perceived by most of the caregivers in the form of depression, anxiety, and stress while taking care of individuals suffering from chronic mental disorders such as schizophrenia. A study observed that among the primary caregivers of individuals with schizophrenia, 12.3% had depression, 16.7% had anxiety, and 7% had stress (Shin et al., 2020). Family members or primary caregivers are the major source of the care for individuals suffering from chronic illness like schizophrenia. While taking care of individuals with schizophrenia, many times the roles and interactions of the family members gets disturbed. Family members tend to experience the burden of care due to the chronicity, nature, uncertainty about the course as well as prognosis, treatment cost, and stigma related to schizophrenia. Other factors such as embarrassment associated with the presentation of symptoms of schizophrenia and lack of social support also tend to increase the caregiver burden (Shamsaei et al., 2015).

A study found that 18.33% caregivers of individuals with schizophrenia had depression compared to only 3.33% healthy non-caregivers who were at risk for the depression (El-Tantawy et al., 2010). A study found that psychological issues such as anxiety, insomnia, and depression were two times higher among the caregivers of people suffering from schizophrenia when compared with the general population (Oldridge & Hughes, 1992). A study found that about 49% of the first degree caregivers experienced a high degree of caregiver burden while providing care for individuals with a diagnosis of schizophrenia (Inogbo et al., 2017). Another study found that the carers of people with schizophrenia had higher level of stress (76%) and anxiety (58%) compared to the control group (Velligan et al., 2019).

American Psychological Association has defined the resilience as a way of adjusting well to the context of tragedy, adversity, threats, trauma, or the significant stressors (Southwick et al., 2014). Resilience is an ability to recover or bounce back from the adverse conditions or stress (Smith et al., 2008). A study observed that resilience which was measured by using brief resilience scale (BRS) was negatively associated with the psychological issues like depression, anxiety, and negative affect as well as with the physical symptoms (Smith et al., 2008). A randomized controlled trial (RCT) concluded that improving the resilience among the caregivers can help them in managing the individuals with schizophrenia in better way (Behrouian et al., 2021).

Rationale for the present study

Schizophrenia is a serious and prevalent mental disorder that most psychiatrists come across on a frequent basis. Care giving of such individuals with schizophrenia comes out as a challenging task in the form of physical, social, financial, and emotional well-being. We considered primary caregivers to those who were living with the individuals diagnosed with schizophrenia and taking care of them for at least six months, as this much time is required for establishing the diagnosis of schizophrenia according to DSM-5 criteria (Lewis et al., 2017). Primary caregivers provide direct patient care, aid with regular task, psychological, interpersonal, and even financial contribution. The prolonged stress and daily difficulties in providing care for the individuals with severe mental disorders like schizophrenia can be the source for the development of caregiver burden among the primary caregivers. Resilience acts a link between burden of caregiving and distress (Wang et al., 2020). However, if the primary caregiver is resilient enough, with a positive attitude he or she can take care of self as well as the suffering individual, and thus can overcome the caregiver burden.

But there is paucity of researches regarding the caregiver burden and its correlation with resilience among the primary caregivers of individuals with schizophrenia in rural setting of India. Present study will help to fill up this research gap.

Objective of the present study

Primary objective of the present study was to assess a relationship between the depression, anxiety, stress and the resilience among primary caregivers of individuals with schizophrenia.

Pre-specified hypothesis

Based on the previous study findings (Smith et al., 2008; Behrouian et al., 2021; Wang et al., 2020; Ghogare et al., 2021), we hypothesized that caregivers with high resilience level will have lower rates of the depression, anxiety, and stress..

Research question of the present study

Was there any correlation between the caregiver burden and the resilience in primary caregivers of individuals with schizophrenia? reflected the research question of the present study.

2. MATERIALS AND METHODS

Study design

Present study was cross-sectional observational study.

Study setting, location, and relevant dates

Present study was conducted in the inpatient as well as outpatient department of Psychiatry on the caregivers of individuals suffering from schizophrenia who attended tertiary care rural hospital from central India. The process of data collection was carried out over a period of 2 months from August 4, 2021 to October 3, 2021 through predesigned standard questionnaire, using the consecutive sampling method. Prior to onset of the present study, approval was obtained from institutional ethics committee.

Eligibility criteria for the study participants and sources and methods of selection of study participants

Inclusion criteria adopted for the present study were primary caregivers of the people suffering from the schizophrenia who gave consent for participation in the study and those who belonged to an age group of 18 to 65 years. Exclusion criteria adopted for the present study were primary caregivers who were having history of psychosis, dementia, terminal illnesses, chronic physical illnesses, head or brain injuries, substance use disorder except for nicotine, and those who did not wish to participate in the present study.

Data sources/measurement

Primary caregivers whose family member(s) were diagnosed with schizophrenia were assessed for the caregiver burden in the form of depression, anxiety and stress, and the resilience after taking informed consent for the study by applying inclusion and exclusion criteria. Prior to beginning of the study, the researchers introduced themselves and briefly explained the nature of the study to the participants in their vernacular languages. A written informed consent form was prepared in the three languages that were in English, Hindi, and Marathi languages for the better understanding of study participants. Confidentiality regarding each and every participant's personal identity and privacy was strictly maintained. The researchers had explained clearly to the participants that all the gathered information will be used only for the scientific research purpose. Then psychological scales were applied on the primary caregivers. The researchers guided all the study participants while solving the questionnaires. In the survey, we have used two scales namely Depression, Anxiety and Stress Scale 21(DASS-21) and Brief Resilience Scale (BRS).

DASS-21 is a 21-item scale with collection of three self-report sub-scales, with seven items per each sub-scale of Depression, Anxiety, and Stress in order to estimate subjective emotional states (Lovibond & Lovibond, 1995). Every item of DASS-21 is rated on a scale of 0 to 3. Scores of all the 3 sub-scales of DASS-21 are calculated by summing the scores for the respective items. Final scores of 3 sub-scales are gained by multiplying the total scores of all the 3 sub-scales by 2. As regards the depression sub-scale, scores of up to 9, 10 to 13, 14 to 20, 21 to 27, and 28 and above indicate no, mild, moderate, severe, and extremely severe depression. As regards the anxiety sub-scale, scores of up to 7, 8 to 9, 10 to 14, 15 to 19, and 20 and above indicate no, mild, moderate, severe, and extremely severe anxiety. As regards stress sub-scale, scores of up to 14, 15 to 18, 19 to 25, 26 to 33, and 34 and above indicate no, mild, moderate, severe, and extremely severe stress. DASS-21 is having excellent reliability based on Cronbach's alpha values of

0.81 for depression sub-scale, 0.89 for anxiety sub-scale, and 0.78 for stress sub-scale (Cocker et al., 2018). DASS-21 has excellent concurrent, discriminative and convergent validities, and excellent internal consistency. DASS-21 is valid, reliable, and easy to apply. It has been evident that application of DASS-21 has enhanced the diagnosis of stress, depression, and anxiety in the study participants (Cocker et al., 2018).

BRS is a 6-item scale that measures an ability to recover or bounce back from the adverse conditions or stress (Smith et al., 2008). Every item is scored on a scale of 1 to 5, thus yielding a total score in a range of 6 to 30. Final score is calculated by dividing the total scores by number of questions attempted by the participant. BRS scores of 1.00 to 2.99, 3.00 to 4.30, and 4.31 to 5.00 indicate low, normal, and high levels of resilience respectively (Smith et al., 2008). Factor analysis of BRS showed Eigen values of a single factor of more than 1.0, which accounted for 73.54% of total variance. Reliability analysis of BRS showed that Cronbach's alpha was 0.93, which indicated that BRS has good reliability (Smith et al., 2008). Smith et al., (2008) found that BRS was expectedly associated with social relations, health, coping, and personal characteristics of the study participants. They also found that BRS was inversely correlated with depression, anxiety, physical symptoms, and negative affect when controlled for the factors like type D personality and social support.

Bias

Present study was a voluntary open survey. Researchers had personally introduced and explained about the nature and purpose of the study to all the participants in their vernacular languages. Inpatient as well as outpatient registration numbers were noted down on every study participants' pro-forma to avoid the duplication of the data.

Study/sample size

Study size had been estimated by using the formula for cross-sectional design of the study which was n = 4pq/L^2, where "p" is the prevalence of caregiver burden among the primary caregivers of individuals with schizophrenia, "q" is 100 − p, and "L" is an allowable error which is 20% of the "p" (Ghogare & Patil, 2020). Assumed from the former study findings (Inogbo et al., 2017; Velligan et al., 2019), the value of "p" was selected as 56%. So, at p = 56%, with 95% confidence interval, and 20% allowable marginal error, least required sample size calculated was 78.57, which was rounded off to 80. When the study participant responses hit completely answered number of 80, the study was stopped and the statistical analysis was performed.

Statistical methods

Data from the questionnaires were entered by using the Microsoft Excel version 2010. The final data were scrutinized by the help of PSPP statistical software version 1348.0.0.0 (open source application - free alternative for the statistical package for social sciences). Continuous data were presented as the mean and the standard deviation (SD), while categorical data were presented in the form of percentage and frequency. Statistical analysis was done by using descriptive and inferential statistics. Chi-square test, Fisher exact test, and Pearson's correlation coefficient were used to assess a significance level and correlation of the caregiver burden with the resilience. The level of significance selected for this study was p ≤0.05.

3. RESULTS

Distribution of the socio-demographic data of the individuals with schizophrenia

Table 1 shows that majority of the individuals with schizophrenia belonged to an age group 31–50 years (47.5%), were male (52.5%), literate (78.8%), unemployed (75%), married (62.5%), belonged to nuclear family (75%), and from rural area of residence (67.5%).

Table 1 Distribution of socio-demographic data of the individuals with schizophrenia (n = 80)

Socio-demographic data of individuals with Schizophrenia	n (%)
Age groups (in years)* Up to 30 31 to 50 51 to 75	 17 (21.3) 38 (47.5) 25 (31.2)
Gender Male Female	 42 (52.5) 38 (47.5)

Education	
Literate	63 (78.8)
Illiterate	17 (21.2)
Occupation	
Employed	20 (25)
Unemployed	60 (75)
Marital status	
Married	50 (62.5)
Unmarried	20 (25)
Widow/ widower	2 (2.5)
Separated/ divorced	8 (10)
Family type	
Nuclear	60 (75)
Nuclear extended	20 (25)
Residence	
Rural	54 (67.5)
Urban	26 (32.5)

* Mean age ± SD (Range) = 42.65 ± 13.67 (17 – 74)

Distribution of the schizophrenia related data of the individuals diagnosed with schizophrenia

Table 2 shows that majority of individuals with schizophrenia had duration of schizophrenia between 5 to 15 years (70%), good compliance to the treatment, (88.8%), absence of family history of schizophrenia (66.2%), and history of combined use of tobacco and alcohol (66.3%).

Table 2 Distribution of Schizophrenia related data of the individuals with schizophrenia (n = 80)

Schizophrenia related data of the diagnosed individuals	n (%)
Duration of schizophrenia*	
Up to 5 years	10 (12.5)
5 to 15 years	56 (70)
16 to 25 years	9 (11.3)
More than 25 years	5 (6.2)
Treatment compliance	
Good	71 (88.8)
Poor	9 (11.2)
Family history of schizophrenia	
Maternal history	14 (17.5)
Paternal history	13 (16.3)
Absent	53 (66.2)
History of substance use	
Tobacco	6 (7.5)
Tobacco + Alcohol	53 (66.3)
None	21 (26.2)

* Mean duration ± SD (Range) = 11.69 ± 8.58 (1 – 50)

Distribution of the socio-demographic data of the primary caregivers

Table 3 shows that majority of the primary caregivers were in an age group of 36 to 50 years (41.3%), belonged to male gender (55%), were literate (98.8%), unemployed (55%), married (82.5%), and mother by relationship (20%).

Table 3 Distribution of socio-demographic data of primary caregivers of individuals with schizophrenia (n = 80)

Socio-demographic data of Primary caregivers	n (%)
Age group (years)*	
18 to 35	20 (25)
36 to 50	33 (41.3)
51 to 65	27 (33.7)
Gender	
Male	44 (55)
Female	36 (45)
Education	
Literate	79 (98.8)
Illiterate	1 (1.2)
Occupation	
Employed	36 (45)
Unemployed	44 (55)
Marital status	
Married	66 (82.5)
Unmarried	14 (17.5)
Relationship with individuals with schizophrenia	
Husband	15 (18.7)
Wife	12 (15)
Son	12 (15)
Brother	8 (10)
Father	8 (10)
Mother	16 (20)
Daughter	7 (8.7)
Cousin brother	1 (1.3)
Nephew	1 (1.3)

* Mean age ± SD (Range) = 45.23 ± 12.14 (20 – 65).

Distribution of the severities of stress, depression and anxiety, and levels of resilience among the primary caregivers

Table 4 shows that 55% primary carers had depression of which 18.8% had mild, 27.5% had moderate, 6.2% had severe, and 2.5% had extremely severe depression. 35% primary carers had anxiety of which 11.3% had mild, 16.3% had moderate, 3.7% had severe, and 3.7% had extremely severe anxiety. The prevalence of stress in primary carers was 48.7% of which 21.3% had mild, 18.7% had moderate, 7.5% had severe, and 1.2% had extremely severe stress. The mean scores (Mean ± SD (Range)) for anxiety, stress, and depression sub-scales of DASS-21 scale were 6.08±5.62 (0 – 26), 15.43±7.16 (2 – 38), and 11.35±6.62 (0 – 30) respectively. As regards the resilience, 20% had low, 75% had normal, and 5% had high levels of resilience.

Table 4 Distribution of the levels of depression, anxiety, stress, and resilience among primary caregivers of individuals with schizophrenia (n = 80)

Distribution of the levels of depression, anxiety, stress, and resilience among primary caregivers	n (%)
Depression	
No	36 (45)
Mild	15 (18.8)
Moderate	22 (27.5)
Severe	5 (6.2)
Extremely severe	2 (2.5)
Anxiety	

No	52 (65)
Mild	9 (11.3)
Moderate	13 (16.3)
Severe	3 (3.7)
Extremely severe	3 (3.7)
Stress	
No	41 (51.3)
Mild	17 (21.3)
Moderate	15 (18.7)
Severe	6 (7.5)
Extremely severe	1 (1.2)
Resilience	
Low	16 (20)
Normal	60 (75)
High	4 (5)

Association between the schizophrenia related data of the diagnosed individuals and the depression in primary caregivers

Table 5 shows that none of the schizophrenia related data of the diagnosed individuals were associated with the depression in their caregivers.

Table 5 Association between schizophrenia related data of diagnosed individuals and depression in primary caregivers

Schizophrenia related data of the diagnosed individuals	Depression in primary caregivers		P value
	Present (n_1 = 44)	Absent (n_2 = 36)	
Duration of schizophrenia			
Up to 5 years	3 (6.8)	7 (19.5)	
5 to 15 years	36 (81.8)	20 (55.5)	
16 to 25 years	4 (9.1)	5 (13.9)	0.359
More than 25 years	1 (2.3)	4 (11.1)	
Treatment compliance			
Good	38 (86.4)	33 (91.7)	
Poor	6 (13.6)	3 (8.3)	0.256
Family history of schizophrenia			
Maternal history	10 (22.7)	4 (11.1)	
Paternal history	7 (15.9)	6 (16.7)	0.243
Absent	27 (61.4)	26 (72.2)	
History of substance use			
Tobacco	2 (4.5)	4 (11.1)	
Tobacco + Alcohol	30 (68.2)	23 (63.9)	
None	12 (27.3)	9 (25)	0.730

Association between the schizophrenia related data of the diagnosed individuals and the anxiety in primary caregivers

Table 6 shows that none of the schizophrenia related data of the diagnosed individuals were associated with the anxiety in their caregivers.

Table 6 Association between schizophrenia related data of diagnosed individuals and anxiety in primary caregivers

Schizophrenia related data of the diagnosed individuals	Anxiety in primary caregivers		P value
	Present (n₁ = 28)	Absent (n₂ = 52)	
Duration of schizophrenia			
Up to 5 years	1 (3.6)	9 (17.3)	
5 to 15 years	21 (75)	35 (67.3)	
16 to 25 years	4 (14.3)	5 (9.6)	
More than 25 years	2 (7.1)	3 (5.8)	0.395
Treatment compliance			
Good	24 (85.7)	47 (90.4)	
Poor	4 (14.3)	5 (9.6)	0.243
Family history of schizophrenia			
Maternal history	7 (25)	7 (13.5)	
Paternal history	4 (14.3)	9 (17.3)	
Absent	17 (60.7)	36 (69.2)	0.311
History of substance use			
Tobacco	9 (32.2)	12 (23.1)	
Tobacco + Alcohol	2 (7.1)	4 (7.7)	
None	17 (60.7)	36 (69.2)	0.078

Association between the schizophrenia related data of the diagnosed individuals and the stress in primary caregivers

Table 7 shows that none of the schizophrenia related data of the diagnosed individuals were associated with the stress in their caregivers.

Table 7 Association between schizophrenia related data of the diagnosed individuals and stress in primary caregivers

Schizophrenia related data of the diagnosed individuals	Stress in primary caregivers		P value
	Present (n₁ = 39)	Absent (n₂ = 41)	
Duration of schizophrenia			
Up to 5 years	1 (2.5)	9 (21.9)	
5 to 15 years	32 (82.1)	24 (58.5)	
16 to 25 years	5 (12.8)	4 (9.8)	0.534
More than 25 years	1 (2.6)	4 (9.8)	
Treatment compliance			
Good	34 (87.2)	37 (90.2)	
Poor	5 (12.8)	4 (9.8)	0.977
Family history of schizophrenia			
Maternal history	9 (23.1)	5 (12.2)	
Paternal history	4 (10.3)	9 (21.9)	
Absent	26 (66.6)	27 (65.9)	0.075
History of substance use			
Tobacco	2 (5.1)	4 (9.8)	
Tobacco + Alcohol	25 (64.1)	28 (68.3)	
None	12 (30.8)	9 (21.9)	0.697

Correlation between the resilience, depression, anxiety, and stress in the primary caregivers of individuals with schizophrenia

Table 8 and figures 1, 2, and 3 reveal that by using Pearson's correlation coefficient, significant negative correlation was found between resilience and depression severity (r= -0.23), anxiety severity (r= -0.35), and stress severity (r= -0.24) which clearly proved that, the probability of caregiver burden increases with decreasing resilience.

Table 8 Correlation between resilience, depression, anxiety, and stress in primary caregivers

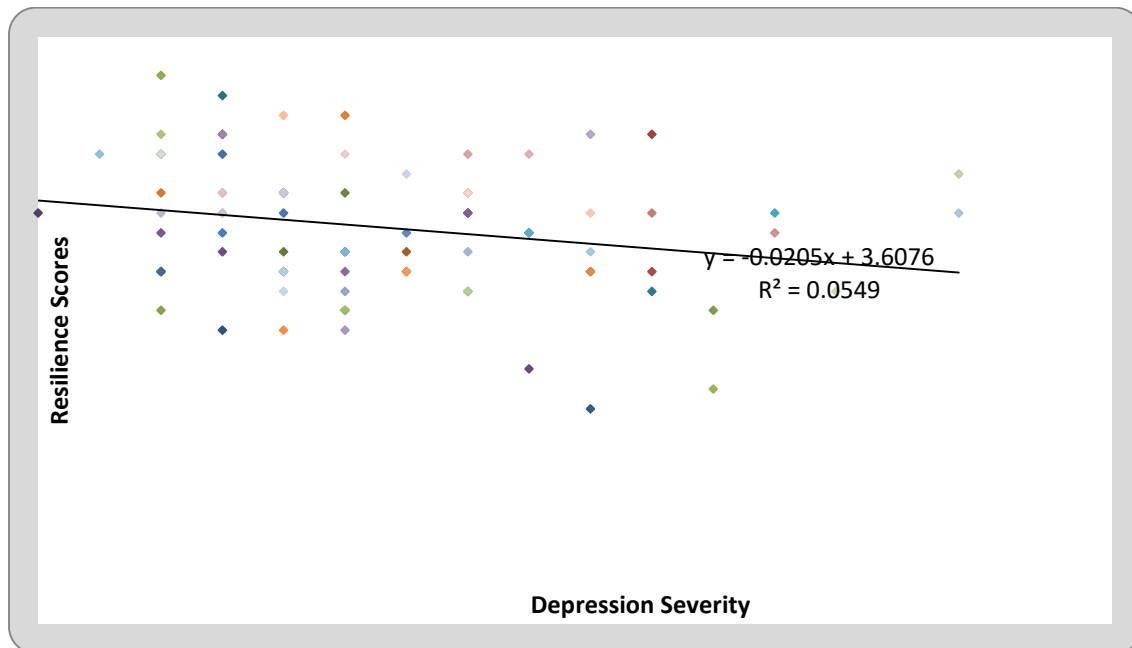| Caregiver burden	Resilience level in primary caregivers			P value	Pearson's 'r'
	Low (n1 = 16)	Normal (n2 = 60)	High (n3 = 4)		
Depression Present Absent	12 (75) 4 (25)	31 (51.7) 29 (48.3)	1 (25) 3 (75)	0.11	- 0.23
Anxiety Present Absent	10 (62.5) 6 (37.5)	18 (30) 42 (70)	0 4 (100)	0.01	- 0.35
Stress Present Absent	11 (68.8) 5 (31.2)	28 (46.7) 32 (53.3)	0 4 (100)	0.03	- 0.24

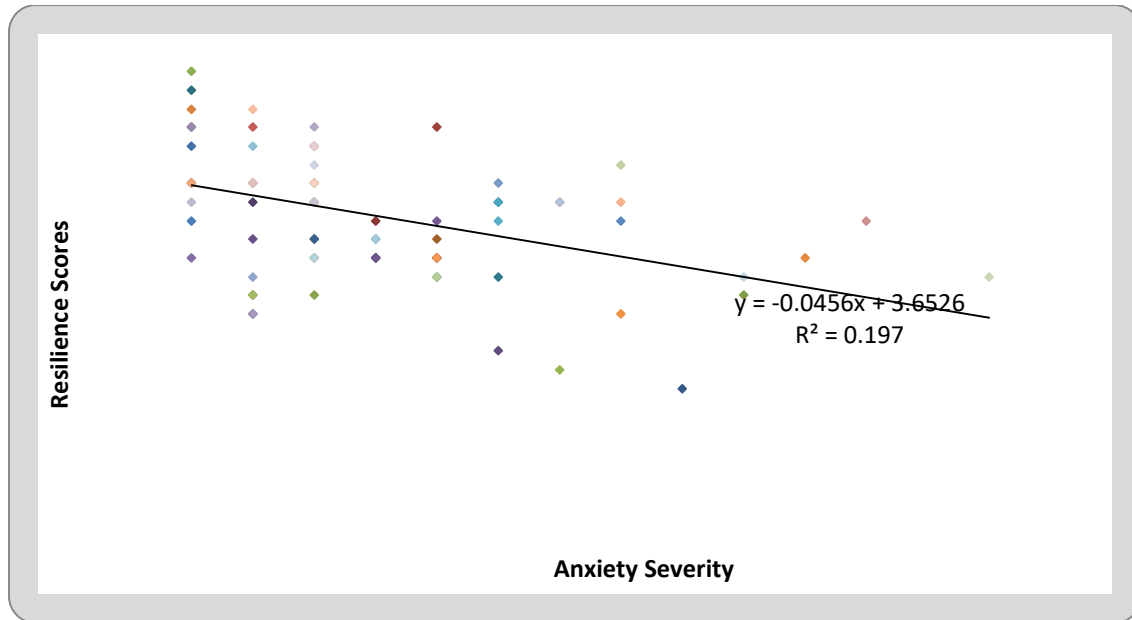**Figure 1** Correlation between depression severity and resilience scores

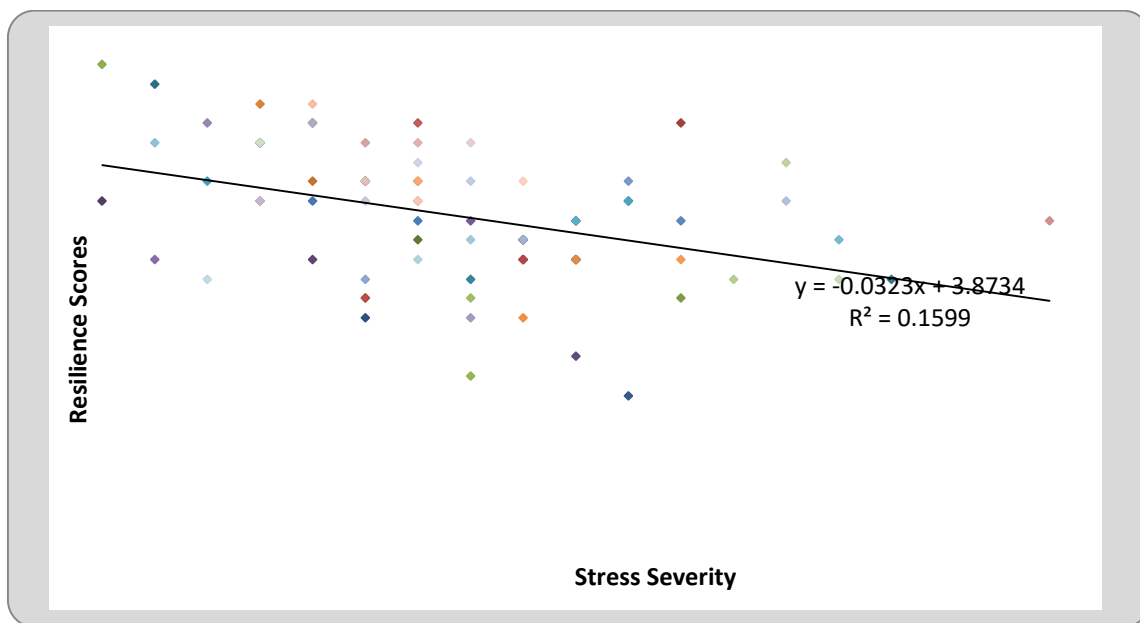**Figure 2** Correlation between anxiety severity and resilience scores

Figure 3 Correlation between stress severity and resilience scores

4. DISCUSSION

Relationship between schizophrenia related variables of the diagnosed individuals and depression, anxiety, and stress among their caregivers

In the present study, none of the schizophrenia or illness related variables of the individuals suffering from schizophrenia were significantly associated with the presence of psychological caregiver burden like depression, stress, and anxiety in their primary caregivers. Similar finding was observed by another study that none of the clinical characteristics were significantly associated with the psychological issues of the caregivers namely stress, depression, and anxiety (Shin et al., 2020). These findings suggested that caregivers tend to perceive the burden irrespective of duration of illness, severity of illness, treatment compliance, family history of similar illness, and history of substance abuse by the individual suffering from mental illness. El-Tantawy et al., (2010) found that depressive symptoms among the caregivers were associated with the factors such as older age group of caregivers, more number of hours spent per week while taking care of the individuals with a diagnosis of schizophrenia, and the duration of providing the care to individuals suffering from schizophrenia. Karlikay et al., (2004) observed that the level of caregiver burden was not associated

with the duration of illness. Ohaeri, (2001) observed that the severity of psychotic illnesses like schizophrenia and poor support from social system have significant role in the amount of burden perceived by the caregivers.

Caregivers tend to perceive the burden in various areas of their lives in the form of social isolation, financial problems, family functioning, and health (Ampalam et al., 2012). The most common type of caregiver burden among the carers of people with chronic mental illnesses like schizophrenia identified were anxiety, depression, and burnout which tend to occur when caregivers slip beyond the point of exhaustion (Ampalam et al., 2012). In the present study, prevalence of depression among the primary caregivers was 55%. Out of this 55%, 18.8% had mild, 27.5% had moderate, 6.2% had severe, and 2.5% had extremely severe depression. Shin et al., (2020) observed that the prevalence of depression among the caregivers was 12.3%. The prevalence of caregiver burden as the depression was found to be in a range of 18 to 47% (Muscroft & Bowl, 2000). The prevalence of anxiety among the primary caregivers in the present study was 35% out of which 11.3% had mild, 16.3% had moderate, 3.7% had severe, and another 3.7% had extremely severe anxiety. Shin et al., (2020) found that the prevalence of the anxiety among the carers of people afflicted by schizophrenia was 16.7%.

In this study, prevalence of stress in the primary caregivers was 48.7% of which 21.3% had mild, 18.7% had moderate, 7.5% had severe, and 1.2% had extremely severe stress. Shin et al., (2020) found that the prevalence of stress among the carers of persons afflicted by the schizophrenia was 7%. It is a well-known fact that caring for the individuals with psychiatric disorders is significantly associated with greater stress levels than caring for the individuals suffering from functional hindrance due to any chronic physical or medical disorders (Ampalam et al., 2012). Unlike the present study, Shin et al., (2020) did not categorize the stress, anxiety, and depression in the caregivers into the various levels of severities. The differences in the prevalence of anxiety, depression, and stress in the caregivers in the present study and that of the study conducted by Shin et al., (2020) might be due to the fact that present study was conducted at health facility from rural India while later study was conducted at urban health care setting of Kuching city which is the capital city of the state Sarawak in Malaysia. So, these findings might reflect on the fact that the prevalence of depression, anxiety, and stress in the primary caregivers were more in the present study than that of Malaysian study conducted by Shin et al., (2020) as the present study was conducted in rural area of India with the availability of limited mental health resources.

A study found that there used to be a treatment disparity between rural and urban settings when it comes to provision of mental health services (Morales et al., 2020). Individuals living in rural area tend to receive mental health check-ups and treatments less frequently that too from less trained personnel mostly (Morales et al., 2020). The various reasons that accounted for poor mental health treatments in rural areas include lower access to mental health providers like psychiatrists, lack of adequately trained mental health care staff, limited availability of the specialty mental health care services, and lack of coordination and utilization of the available resources (Morales et al., 2020; Andrilla et al., 2018; Kepley & Streeter, 2018).

Psychiatrists can play a crucial role in tackling the caregiver burden in effective ways. According to the recent National Mental Health Survey (NMHS, 2015-2016), the prevalence of psychiatric disorders in India was found to be 10.6% (Murthy, 2017; Garg et al., 2019). In India, at present there are only 0.75 psychiatrists per 100,000 populations and the desired number is more than 3 psychiatrists per 100,000 populations (Garg et al., 2019). So, there is need for increasing the number of trained mental health professionals in India to provide not only the better treatment care options for the individuals suffering from any mental disorder but also for providing the strength and resilience to the carers of the people suffering from psychiatric disorders.

Relationship between the resilience and caregiver burden among the caregivers of individuals with schizophrenia

In the present study, 20% primary caregivers had low level of resilience, whereas 75% had normal resilience level and 5% had high resilience level. Mahmoud, (2018) observed that 53.6% caregivers of the persons with schizophrenia had low resilience level, whereas 34% had moderate and 17% had high resilience levels. This dissimilarity in the levels of resilience among the participants of these studies might be secondary to the application of different measuring tools such as BRS in the present study and family resilience assessment scale (FRAS) in the study conducted by Mahmoud, (2018).

In the present study, significant negative correlation was found between the level of resilience and the severity of caregiver burden like depression, anxiety, and stress among the primary carers of individuals with schizophrenia. Mahmoud, (2018) observed that 53.6% caregivers had low resilience and 55.4% had experienced moderate to severe level of caregiver burden while caring for the individuals with schizophrenia. These findings from the present study and that of Mahmoud, (2018) suggested that caregivers with higher resilience level had lower level of caregiver burden in the form of stress, anxiety, and depression, thus proving the stated hypothesis of the present study. Another study found that being resilient enough was linked with reduced level of caregiver burden among the carers of the people suffering from schizophrenia (Pipatananond et al., 2006). These findings confirmed that

caregivers of the individuals with serious and chronic mental disorders like schizophrenia face huge amount of burden that can compromise their own functioning and mental health leading to occurrences of the stress, anxiety, and/or depression in themselves.

Limitations

As the present study was a type of cross-sectional study, a causal relationship could not be established. Although the primary caregivers answered the standard questionnaires like DASS-21 and BRS scales based on their experiences of providing the care for suffering individuals, an overestimation or an exaggeration might be present as an arguable aspect. Also, the study had been done on small number of participants who were the primary caregivers, thus limiting the generizability of the results found. Finally, as the primary caregivers were interviewed about the caregiver burden, they might have answered in such a way to portray themselves in a good light, hence social desirability bias might be present.

5. CONCLUSION

Statistically significant negative correlation of the resilience with the caregiver burden (depression, stress, and anxiety) has been observed. Thus, observations from this study clarified the major role of resilience that helps in reducing the caregiver burden effectively. Therefore, being resilient may be the direct way to get greatly relieved from caregiver burden. In present time, there is strong need for developing stress coping techniques and periodic counseling interventions for promoting the resilience among the primary carers of persons suffering from schizophrenia for the better outcome.

Author contributions

Rashmi Shankardayal Shukla: Concepts, Design, Definition of intellectual content, Literature search, Data acquisition, Data analysis, Manuscript editing, Manuscript review, Guarantor.

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Ethical approval

The study was approved by Medical Ethics Committee of Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi (Meghe), Wardha, Maharashtra, India, with the letter number: (DMIMS(DU)/IEC/2021-22/540, dated August 03, 2021).

Conflict of interests

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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