

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia: A Hospital –Based Cross Sectional Study

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ABSTRACT

Mental health problems like stress, anxiety and depression are common in caregivers of patients with schizophrenia. There is a role of underlying cognitive emotional regulation in the caregivers that leads to the experience of these mental health issues in them. **Methodology:** A total of 190 caregivers along with their patients were enrolled into the study. Scales like GAD-7, PHQ-9, PSS and cognitive emotional regulation questionnaire (CERQ) were used to assess the anxiety, depression, stress and cognitive emotional regulation in the caregivers. **Results and Discussion:** The mean scores of GAD-7, PHQ-9 and PSS were 6.05 (SD= 4.27), 6.09 (SD = 4.69) and 16.51 (SD =7.27) respectively. The adaptive strategies like positive reappraisal, refocus on planning significantly correlated most and were protective for above mental health problems while maladaptive strategies like catastrophizing and others- blame correlated most and their increase use lead to poor mental health outcome. With increase in age the use maladaptive strategies decreased while marital status of the caregiver also had a significant bearing on the use of strategies like catastrophizing and others- blame. Acceptance appears to be maladaptive in the caregivers though conventionally it thought to be an adaptive emotional regulation strategy.

Keywords: *Cognitive Emotional Regulation Strategies, Stress, Anxiety, Depression, Caregivers, Schizophrenia*

Schizophrenia is a chronic mental disorder that affects the functioning of individuals in various aspects of their lives, such as social, occupational, educational, interpersonal, and self-care. As a result, they often require supervision and care from family members or society. The family members are usually the primary caregivers for individuals with schizophrenia. Caregivers often face unpredictable stressors and challenging behaviors from the person with schizophrenia (Kamil et al., 2019).

Caregivers of individuals with schizophrenia often experience a range of mental health issues. Stress, anxiety, depression, and burnout are commonly reported problems among caregivers of individuals with schizophrenia. The stress perceived across the studies were in

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Received: May 13, 2024; Revision Received: May 21, 2024; Accepted: May 25, 2024

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

the range of 31.5% to as high as 98.6 % in caregivers of persons with schizophrenia (Janah et al., 2021; Ong et al., 2016; Ranjan et al., 2022; Stanley et al., 2017; Udoh et al., 2021) while depression was reported in the range of 12.3 -61.5% ((Aarti et al., 2019; Derajew et al., 2017; Magaña et al., 2007; Mehmood et al., 2022; Prasad et al., 2023; Ranjan et al., 2022; Shin et al., 2020) and anxiety in the range of 25-78% (Aarti et al., 2019; Bademli, 2017; Lerner et al., 2018; Mehmood et al., 2022; Ranjan et al., 2022; Shin et al., 2020; Singh et al., 2011). Apart from the above other issues like post-traumatic stress disorder, sleep problems, substance use, social isolation and episodes of violence and uncooperative behaviour of patients and financial impact of caregiving also result in the overall mental health burden of the caregivers.

Cognitive emotional regulation refers to the conscious way of regulating one's emotion in relation to an event or a situation It can be considered to be part of the broader concept of emotional regulation and can be divided into intrinsic and extrinsic processes which is responsible for monitoring, evaluating and modifying emotional reactions (N Garnefski et al., 2001). Garnefski and Kraaij developed the Cognitive Emotion Regulation Questionnaire (CERQ), which is tailored to assess the conscious cognitive aspects of emotional regulation. The cognitive emotional regulation strategies have been divided to adaptive and maladaptive. The adaptive strategies are acceptance, positive refocusing, refocus on planning, positive reappraisal and putting into perspective. The maladaptive strategies are self-blame, ruminations, catastrophizing and blaming others (Domaradzka et al., 2018; N Garnefski et al., 2001; Martin et al., 2005). The more use of catastrophization, ruminations & self-blame and lesser use of positive reappraisal are frequently related to anxiety and depression in the study population across studies (Nadia Garnefski et al., 2017; Martin et al., 2005; Min et al., 2013; Q.-Q. Wang et al., 2021). Cognitive strategies like blaming others and rumination are positively related to stress while positive reappraisal and positive refocusing are negatively associated with stress (Nadia Garnefski et al., 2007; Miklósi et al., 2014; Oftadehal et al., 2012).

Previous research on caregivers of individuals with schizophrenia has primarily focused on burnout, burden, stress, depression, and anxiety. However, the impact of cognitive emotional regulation strategies on the mental health outcomes of caregivers is not well understood. Therefore, this study aims to investigate the relationship between cognitive emotional regulation strategies and levels of stress, anxiety, and depression in caregivers of individuals with schizophrenia.

MATERIALS AND METHOD

It was cross-sectional study that was done on caregivers of patients with schizophrenia who were visiting the psychiatry department of a government medical college, New Delhi, India during the period of January 2023 to December 2023. The study recruited caregivers who attended to patients diagnosed with schizophrenia for treatment. Patients with a history of schizophrenia lasting more than 2 years were included in the study. The caregivers recruited were in the age group of 18- 60 years. Caregivers were defined as person who is living with the patient and intimately involved in the care of the patient for a minimum duration of 1 year, i.e., looking after her/his day to day needs, medication intake, accompanying the patient during the hospital visits, staying with the patient in case the patient is admitted to the hospital, and maintaining liaison with the hospital staff (Hegde et al., 2019). Sample sizes of 190 patients based on prevalence of schizophrenia 1.41 per 1000 population (Murthy, 2017) with an absolute error of 5%. The participants were recruited by convenient sampling

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

technique. The study participants were enrolled following their written informed consent. 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 details of the patient and the caregiver.
- ii. **Generalized Anxiety Disorder -7 (GAD-7):** It is a 7-item scale for screening anxiety and assessing its severity in clinical situations over past 2 weeks. It has good reliability and validity. The self-report scale was used in the study, The higher the score higher is the severity of anxiety. (Spitzer et al., 2006)
- iii. **Patient Health Questionnaire-9 (PHQ-9):** It is a 9-items self-administered questionnaire which is part of the depression module from the PRIME-MD diagnostic tool for common mental health disorders. Major depression is diagnosed if five or more symptoms from the list are present on most days in the last 2 weeks with one of the symptoms should be depression or anhedonia. It has an internal reliability of $\alpha=0.89$. The higher the score in the scale the more will be the severity of depression. (Kroenke et al., 2001)
- iv. **Perceived stress Scale (PSS):** It is a 10-item scale designed to assess an individual's perception of stress. It measures the extent to which people perceive situations in their lives as stressful, focusing on aspects such as unpredictability, uncontrollability, and feeling overwhelmed. The scale includes direct questions about current levels of experienced stress and the item scores is obtained after reversing the scores on four positively stated items namely item no. 4,5,7 and 8. The questions in the scale ask about feelings and thoughts during the last one month. The higher the score, the more is the stress. It has an internal consistency of Cronbach's alpha = 0.731 (Cohen, 1994).
- v. **Cognitive Emotional Regulation Questionnaire (CERQ):** This scale is used to measure the various types of cognitive emotional regulation strategies that is used in response to facing a stressful life event or situation. It is 36-item questionnaire that consists of nine sub-scales consisting of four questions for each sub-scale. The nine sub-scale are: *Self-blame* refers to blaming oneself for what has been experienced. *Rumination* refers to constantly thinking about the feelings and thoughts associated with negative events. *Catastrophizing* involves emphasizing the terror of an experience. *Blaming others* involves putting the blame for one's experiences on others. *Acceptance* involves resigning oneself to what has happened. *Positive refocusing* means thinking about joyful and pleasant issues instead of dwelling on the negative event. *Refocusing on planning* involves thinking about what steps to take and how to handle the negative event. *Positive reappraisal* involves attaching a positive meaning to a stressful event in terms of personal growth. *Putting into perspective* involves playing down the seriousness of the event or emphasizing its relative insignificance when comparing it to other events. The individual tendency to use each strategy is measured on a 5-point likert scale ranging from 1 (almost never) to 5 (almost always). A higher score on one particular sub-scale shows more frequent use of that cognitive emotional strategy. It has a reliability of α 0.68-0.83 (Nadia Garnefski et al., 2007).

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

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

Caregiver and patient characteristics. Mean scores of PHQ-9, GAD-7, and PSS-10, as well as the various sub-scales of CERQ, were used for correlational analysis to test for significance. The categorical data of caregiver’s socio-demographic characteristics in relation to the mean scores of CERQ were analyzed using t-tests and ANOVA.

RESULTS

A total of 190 caregivers along with their patients were enrolled into the study. The mean of age of the caregiver group was 42.41 years (SD 12.09) with majority being male (57.9%, n =110) and married (76.8%, n =146). The mean age of the patient group was 36.08 (SD=11.53). There were equal numbers of male and female patients. In terms of marital status, 48.9 % (n=93) patients were unmarried while 45.3% (n=86). In terms of the type of schizophrenia suffered by the patients, it was seen that majority of patients were diagnosed with paranoid schizophrenia (61.1%), followed by Undifferentiated schizophrenia (31.1%), Catatonic schizophrenia (6.8%), and Hebephrenic schizophrenia (1.1%). Mean score of depression, anxiety and stress were 6.09(SD=4.69), 6.05 (SD=4.27) and 16.51 (SD=7.27) respectively.

The cognitive emotion regulation strategies employed by caregivers while dealing with their mental health issues was assessed through the Cognitive Emotion Regulation Questionnaire (CERQ). This questionnaire aims to evaluate the various cognitive strategies individuals use to manage their emotions amidst stressful or challenging situations. It was observed that refocus on planning, positive reappraisal, rumination and acceptance have the highest mean scores and seems to be frequently used strategies by the caregiver population. While self-blame and blaming others are the least utilized cognitive emotional regulation strategies by caregivers. The above findings can be seen in table no.1.

Table No.1: Frequency distribution of sociodemographic and clinical variables in the study population

Caregiver Age Mean (SD)	42.41 (12.09)
Caregiver Gender, n (%) Male Female	110 (57.9%) 80 (42.1 %)
Marital Status of Caregiver Married Unmarried Separated Widowed	146 (76.8%) 41 (21.6%) 2 (1.1%) 1 (.5%)
Patients age Mean (SD)	36.08 (11.53)
Patient gender n(%) Male Female	95 (50%) 95 (50%)
Marital Status of Patient Married Unmarried Separated Widowed	86 (45.3%) 93 (48.9%) 9 (4.7%) 2 (1.1%)
Type of Schizophrenia Paranoid	116 (61.1 %)

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

Hebephrenic	2 (1.1%)
Catatonic	13 (6.8 %)
Undifferentiated	59 (31.1%)
PHQ score, Mean (SD)	6.09 (4.69)
GAD7 Score, Mean (SD)	6.05 (4.27)
PSS Score, Mean (SD)	16.51 (7.27)
CERQ, Mean (SD)	
Self-Blame	8.52 (3.70)
Acceptance	12.05 (3.04)
Rumination	12.44 (3.64)
Positive Refocussing	11.26(3.78)
Refocus on planning	13.45 (4.44)
Positive Reappraisal	12.98 (4.88)
Putting into Perspective	11.14 (3.63)
Catastrophizing	10.54 (4.46)
Others blame	9.34(4.35)

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

Further correlation analysis as shown in table 2, reveals that depression in the caregiver has moderately positive correlation with self-blame, other-blame and catastrophization while acceptance has weakly positive correlation with it. Refocus on planning and positive reappraisal had a moderately negative correlation while positive focussing and putting into perspective had weakly negative correlation with depression. In case of anxiety, other-blame, catastrophizing and self-blame had a strongly positive correlation and acceptance had a weakly positive correlation. Positive reappraisal had strongly negative correlation with anxiety. Refocus on planning, putting into perspective and positive refocusing had moderately negative correlation with anxiety. The increase used of strategies like others-blame, catastrophizing and self-blame are strongly related to increased stress while acceptance is weakly related to increased stress. All the adaptive strategies, namely positive reappraisal, refocus on planning, positive focussing and putting into perspective had strong negative correlation with stress and hence use of these strategies are highly protective against stress. It is to be seen that rumination as such has no correlation with depression, anxiety and stress.

Table No. 2: Correlation of Depression, Anxiety and Stress with the domains of Cognitive Emotional Regulation Questionnaire.

	PHQ9 (r value)	GAD7 (r value)	PSS (r value)
Self-Blame	0.436 **	0.499 **	0.551**
Acceptance	0.151 *	0.194**	0.203**
Rumination	-0.036	0.076	0.120
Positive Focus	-0.273**	-0.336**	-0.563**
Refocus on planning	-0.445**	-0.489**	-0.651**
Positive Reappraisal	-0.474**	-0.558**	-0.768**
Putting into perspective	-0.248 **	-0.349**	-0.535 **
Catastrophizing	0.424 **	0.532**	0.669 **
Others blame	0.478**	0.568**	0.675 **

*r = Pearson Correlation Co-efficient, *p value < 0.05, ** p value <0.01, PHQ 9= Patient Health Questionnaire 9, GAD7 = Generalized Anxiety Disorder 7, PSS = Perceived Stress Scale.*

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

As indicated in table 3, that age has a weak negative correlation with others-blame strategy. The maladaptive strategies are negatively related and adaptive strategies positively related to age but this relationship is not significant. There is a significant relationship (p value < 0.05) in the use of rumination strategy used by male and female caregivers. There occurs no such difference in the use of other cognitive emotional regulation strategy across male and female gender. Others blame had highly significant (p value < 0.01) relation while refocus on planning and catastrophizing had significant relationship (p value < 0.05) in while with the marital status of the caregivers.

Table No. 3: Relationship of socio-demographic data of caregivers with sub-scales scores of Cognitive Emotional Regulation Questionnaire

	Age # (Pearson correlation co-efficient)	Gender (p value)#	Marital Status (p value)###
Self-Blame	- 0.044	0.553	0.161
Acceptance	0.038	0.088	0.674
Rumination	- 0.094	0.037*	0.558
Positive Refocusing	- 0.040	0.087	0.583
Refocus on planning	0.065	0.228	0.045 *
Positive Reappraisal	0.122	0.599	0.058
Putting into Perspective	0.044	0.138	0.497
Catastrophizing	- 0.100	0.650	0.044*
Others blame	- 0.177 *	0.612	0.001 **

* p value < 0.05 , ** p value < 0.01 , # Correlational analysis, ## t-test, ### one way ANOVA

DISCUSSION

The current study is a hospital based cross-sectional study that aims to investigate the relationship of various cognitive emotional regulation strategies with the levels of depression, anxiety and stress in the caregivers of schizophrenia. Our findings, consistent with previous research (Aldao et al., 2010; N Garnefski et al., 2001; Y. Wang et al., 2014) , that showed significant correlations between different aspects of the cognitive emotional regulation strategies such as self-blame, catastrophizing, and blaming others, and increased levels of depression, anxiety, and stress. These positive correlations indicate that caregivers tend to use maladaptive coping mechanisms are associated with poor mental health outcome.

Additionally, our study revealed that strategies like positive reappraisal, refocusing on planning, and putting things into perspective were negatively correlated with psychological distress markers. These results are in line with previous research ((Bandadi et al., 2019; Nadia Garnefski et al., 2002; Y. Wang et al., 2014), emphasizing the significance of adaptive coping strategies in reducing the psychological impact of caregiving. Caregivers who utilized these adaptive strategies demonstrated lower levels of depression, anxiety, and stress.

Acceptance as a strategy has been found to be maladaptive in our study. While some of the studies have also reported acceptance as an adaptive strategy and its presence is protective for mental health of a person (Bandadi et al., 2019; Q.-Q. Wang et al., 2021; Y. Wang et al., 2014). Acceptance can be helpful cognitive strategy in most cases but excessive use may indicate a sense of resignation or surrendering self to the situation. A similar finding of a direct relationship or positive correlation of acceptance with psychopathology in the current

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

study which is in line with previous reported studies (Extremiera et al., 2019; Foroudifard et al., 2020; Martin et al., 2005). This is an implication of this study and we propose to consider acceptance as one of the maladaptive strategy.

The adaptive strategies like positive refocusing, positive reappraisal, refocus on planning were more used than the maladaptive strategies like self-blame, blaming others, catastrophization and rumination. In fact, self-blame is the least used strategy and positive refocusing is the most used in our study population. Previous studies also reported similar findings of use of adaptive strategy more than maladaptive ones with positive refocusing being the most frequently used strategy amongst all (N Garnefski et al., 2001; Min et al., 2013).

The use of rumination in the current study was protective in case of depression while it had a direct correlation with anxiety and stress. However, this correlation was not statistically significant in any of the above psychological disorders. Previous researches have linked rumination with poor mental health outcome in the clinical population (Foroudifard et al., 2020; Y. Wang et al., 2014) and there is also a study that reported use of rumination in similar proportion in both clinical and non-clinical population of caregivers (Megreya et al., 2020).

Positive reappraisal and refocus on planning were the adaptive strategies that correlated most robustly with depression, anxiety and stress while others-blame and catastrophizing was most commonly correlated maladaptive strategy for the above mental health problems. Previous researches have also found similar findings. But there are studies that apart from others-blame and catastrophization, have linked rumination more strongly with a poor mental health outcome (Bandadi et al., 2019; Q.-Q. Wang et al., 2021). This may be so as the study population in the previous research were mostly on clinical population, young age population or the type of illness covered was less chronic than that of schizophrenia. The process of caregiving in schizophrenia is a long-term process. With time the coping in the caregiver become better and so rumination may not have much impact on their overall mental health.

We have observed a negative association of rumination and other maladaptive strategies with age which may validate our above hypothesis. We see other-blame has a significant statistical negative relationship with age. This shows that older caregivers may be employing lesser externalization of their emotions thereby reflecting a maturity in their emotional regulation which diminishes their propensity to blame others. This signifies the potential evolution of cognitive emotional regulation over a lifespan thereby aligning with theories of emotional regulation with age. Gender differences were indeed observed in the case of "Rumination," with females demonstrating a higher propensity for engaging in rumination. This finding aligns with previous research by Nolen-Hoeksema (2001), which suggests that women are more likely to ruminate than men. The higher rates of rumination among females may contribute to their increased vulnerability to depression. This underscores the importance of considering gender differences in coping strategies when designing interventions for caregivers. Marital status has been identified as a significant factor influencing coping strategies. Specifically, it has shown a clear relationship with refocus on planning, catastrophizing and other-blame. This indicates that marital relationships can strongly influence the adoption of both adaptive strategies, such as refocus on planning, and maladaptive strategies, such as catastrophizing and others-blame depending upon the social support dynamics. Other-blame having highly significant statistical relationship (p value =

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

0.001) with marital status may show that the single caregivers may more frequently engage in externalize blaming possibly due to absence of partner's support highlighting the importance of social support in selection of coping mechanism.

The study has certain limitations too. Being a self-reported study, it may have chances of bias. It is a cross –sectional study and has no control population. A longitudinal study over the same set of caregiver may show change in emotional regulation strategy employed over due course of time.

CONCLUSION

This study contributes to the growing literature of the relationship of depression, anxiety and stress with cognitive emotional regulation. The findings highlight the need to focus more upon minimizing catastrophic and blaming other type of thinking in the caregiver for alleviating the psychological burden associated with caregiving. A supportive partner and increase in age are protective factors for a better mental health in the caregivers.

REFERENCES

- Aarti, . R., Kumar, R., & Varghese, A. (2019). Depression and quality of life in family caregivers of individuals with psychiatric illness. *International Journal Of Community Medicine And Public Health; Vol 6, No 2 (2019): February 2019*. doi: 10.18203/2394-6040.ijcmph20190196
- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30* 2, 217–237.
- Bademli, K. (2017). Anxiety and Depression in Caregivers of Chronic Mental Illness. *Journal of Depression and Anxiety, 06*. doi: 10.4172/2167-1044.1000254
- Bandadi, L., Chamkal, N., Benlbachir, S., & Ahami, A. O. T. (2019). The use of the adaptive and the maladaptive cognitive emotion regulation strategies by nurses student in Morocco facing to the patient death in a clinical setting. *Biomedical and Pharmacology Journal, 12*(1), 175–181. doi: 10.13005/bpj/1626
- Cohen, S. (1994). Perceived Stress Scale scoring and questions. *Psychology, 1–3*. Retrieved from <http://www.mindgarden.com/products/pss.htm>
- Derajew, H., Tolessa, D., Feyissa, G. T., Addisu, F., & Soboka, M. (2017). Prevalence of depression and its associated factors among primary caregivers of patients with severe mental illness in southwest, Ethiopia. *BMC Psychiatry, 17*(1), 88. doi: 10.1186/s12888-017-1249-7
- Domaradzka, E., & Fajkowska, M. (2018). Cognitive Emotion Regulation Strategies in Anxiety and Depression Understood as Types of Personality. *Frontiers in Psychology, 9*, 856. doi: 10.3389/fpsyg.2018.00856
- Extremera, N., Quintana-Orts, C., Sánchez-Álvarez, N., & Rey, L. (2019). The Role of Cognitive Emotion Regulation Strategies on Problematic Smartphone Use: Comparison between Problematic and Non-Problematic Adolescent Users. *International Journal of Environmental Research and Public Health, 16*(17). doi: 10.3390/ijerph16173142
- Foroudifard, F., Amini, P., Navid, B., Omani-Samani, R., Sepidarkish, M., & Maroufizadeh, S. (2020). Cognitive emotion regulation, anxiety, and depression in infertile women: a cross-sectional study. *Middle East Fertility Society Journal, 25*(1), 24. doi: 10.1186/s43043-020-00035-2

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

- Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation and emotional problems. *Personality and Individual Differences*, 30(8), 1311–1327. doi: [https://doi.org/10.1016/S0191-8869\(00\)00113-6](https://doi.org/10.1016/S0191-8869(00)00113-6)
- Garnefski, Nadia, & Hossain, S. (2017). Relationships between maladaptive cognitive emotion regulation strategies and psychopathology in adolescents from Bangladesh. *Archives of Depression and Anxiety*, 3, 23–29. doi: 10.17352/2455-5460.000019
- Garnefski, Nadia, & Kraaij, V. (2007). The Cognitive Emotion Regulation Questionnaire - Psychometric features and prospective relationships with depression and anxiety in adults. *European Journal of Psychological Assessment*, 23, 141 - 149 (2007), 23. doi: 10.1027/1015-5759.23.3.141
- Garnefski, Nadia, Van Den Kommer, T., Kraaij, V., Teerds, J., Legerstee, J., & Onstein, E. (2002). The relationship between cognitive emotion regulation strategies and emotional problems: comparison between a clinical and a non-clinical sample. *European Journal of Personality*, 16(5), 403–420. doi: 10.1002/per.458
- Hegde, A., Chakrabarti, S., & Grover, S. (2019). Caregiver distress in schizophrenia and mood disorders: the role of illness-related stressors and caregiver-related factors. *Nordic Journal of Psychiatry*, 73(1), 64–72. doi: 10.1080/08039488.2018.1561945
- Janah, M., & Hargiana, G. (2021). Levels of Stress and Coping Strategies in Family Caregivers who Treat Schizophrenic Patients with Risk of Violent Behavior. *Journal of Public Health Research*, 10. doi: 10.4081/jphr.2021.2404
- Kamil, S. H., & Velligan, D. I. (2019). Caregivers of individuals with schizophrenia: who are they and what are their challenges? *Current Opinion in Psychiatry*, 32(3). Retrieved from https://journals.lww.com/co-psychiatry/Fulltext/2019/05000/Care_givers_of_individuals_with_schizophrenia__who.4.aspx
- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606–613. doi: 10.1046/j.1525-1497.2001.016009606.x
- Lerner, D., Chang, H., Rogers, W. H., Benson, C., Lyson, M. C., & Dixon, L. B. (2018). Psychological Distress Among Caregivers of Individuals With a Diagnosis of Schizophrenia or Schizoaffective Disorder. *Psychiatric Services (Washington, D.C.)*, 69(2), 169–178. doi: 10.1176/appi.ps.201600422
- Magaña, S. M., Ramírez García, J. I., Hernández, M. G., & Cortez, R. (2007). Psychological distress among latino family caregivers of adults with schizophrenia: the roles of burden and stigma. *Psychiatric Services (Washington, D.C.)*, 58(3), 378–384. doi: 10.1176/ps.2007.58.3.378
- Martin, R. C., & Dahlen, E. R. (2005). Cognitive emotion regulation in the prediction of depression, anxiety, stress, and anger. *Personality and Individual Differences*, 39(7), 1249–1260. doi: <https://doi.org/10.1016/j.paid.2005.06.004>
- Megreya, A. M., Al-Attayah, A. A., Moustafa, A. A., & Hassanein, E. E. A. (2020). Cognitive emotion regulation strategies, anxiety, and depression in mothers of children with or without neurodevelopmental disorders. *Research in Autism Spectrum Disorders*, 76, 101600. doi: <https://doi.org/10.1016/j.rasd.2020.101600>
- Mehmood, N., Talib, U., & Naeem, F. (2022). The Level of Depression and Anxiety among Caregivers of Patients with Schizophrenia. *Journal of Biomedical Engineering and Medical Imaging*, 9. doi: 10.14738/jbemi.92.11984
- Miklósi, M., Martos, T., Szabó, M., Kocsis-Bogár, K., & Forintos, D. P. (2014). Cognitive emotion regulation and stress: a multiple mediation approach. *Translational Neuroscience*, 5(1), 64–71. doi: 10.2478/s13380-014-0207-9

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

- Min, J.-A., Yu, J. J., Lee, C.-U., & Chae, J.-H. (2013). Cognitive emotion regulation strategies contributing to resilience in patients with depression and/or anxiety disorders. *Comprehensive Psychiatry*, *54*(8), 1190–1197. doi: 10.1016/j.comppsy.2013.05.008
- Murthy, R. S. (2017). National Mental Health Survey of India 2015-2016. *Indian Journal of Psychiatry*, *59*(1), 21–26. doi: 10.4103/psychiatry.IndianJPsychiatry_102_17
- Oftadehal, M., Mahmoodi, B., & Nami, M. (2012). Cognitive Emotion Regulation, Depression and Stress in Iranian Students. *Neuroscience Research Letters*, *3*, 44–47.
- Ong, H. C., Ibrahim, N., & Wahab, S. (2016). Psychological distress, perceived stigma, and coping among caregivers of patients with schizophrenia. *Psychology Research and Behavior Management*, *9*, 211–218. doi: 10.2147/PRBM.S112129
- Prasad, F., Hahn, M. K., Chintoh, A. F., Remington, G., Foussias, G., Rotenberg, M., & Agarwal, S. M. (2023). Depression in caregivers of patients with schizophrenia: a scoping review. *Social Psychiatry and Psychiatric Epidemiology*. doi: 10.1007/s00127-023-02504-1
- Ranjan, L., Gupta, P., Kiran, M., & Singh, N. (2022). Family care burden and its association with psychological distress among caregivers of chronic patients with schizophrenia. *Journal of Public Health and Primary Care*, *3*(3), 81–85. doi: 10.4103/jphpc.jphpc_16_22
- Shin, T. K., Fei, S. H., Yi, C. S., Binti Ruslan, N., & Binti Sharkawi, N. (2020). Depression , Anxiety , Stress and Perceived Social Support in Primary Caregivers of Patients with Schizophrenia at Hospital Sentosa, Kuching, Sarawak, Malaysia. *MJP Online Early*, *29*(1).
- Singh, M., & Sousa, A. De. (2011). Factors affecting depression in caregivers of patients with schizophrenia. *Journal of Mental Health and Human Behaviour*, *16*(2), 87–94.
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–1097. doi: 10.1001/archinte.166.10.1092
- Stanley, S., Balakrishnan, S., & Ilangoan, S. (2017). Psychological distress, perceived burden and quality of life in caregivers of persons with schizophrenia. *Journal of Mental Health*, *26*(2), 134–141. doi: 10.1080/09638237.2016.1276537
- Udoh, E. E., Omorere, D. E., Sunday, O., Osasu, O. S., & Amoo, B. A. (2021). Psychological distress and burden of care among family caregivers of patients with mental illness in a neuropsychiatric outpatient clinic in Nigeria. In PLoS ONE (Vol. 16, Issue 5 May). doi: 10.1371/journal.pone.0250309
- Wang, Q.-Q., Fang, Y.-Y., Huang, H.-L., Lv, W.-J., Wang, X.-X., Yang, T.-T., Yuan, J.-M., Gao, Y., Qian, R.-L., & Zhang, Y.-H. (2021). Anxiety, depression and cognitive emotion regulation strategies in Chinese nurses during the COVID-19 outbreak. *Journal of Nursing Management*, *29*(5), 1263–1274. doi: 10.1111/jonm.13265
- Wang, Y., Yi, J., He, J., Chen, G., Li, L., Yang, Y., & Zhu, X. (2014). Cognitive emotion regulation strategies as predictors of depressive symptoms in women newly diagnosed with breast cancer. *Psycho-Oncology*, *23*(1), 93–99. doi: 10.1002/pon.3376

Acknowledgment

We extend our sincere gratitude to all the caregivers who participated in this study. Their willingness to share their experiences and insights has been invaluable in advancing our understanding of the challenges faced by caregivers of individuals with schizophrenia. We also express our appreciation to the healthcare professionals and staff at [Lady Hardinge

Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia : A Hospital –Based Cross Sectional Study

Medical College, New Delhi] for their support and assistance throughout the research process. Special thanks to my University Shri Jagadish Prasad Jhabramal University] for their guidance and support, without which this study would not have been possible. Lastly, we would like to acknowledge the contributions of our co-authors, Dr. Nimisha Singh and Dr. Dinesh Kataria, whose expertise and guidance greatly enriched this research endeavor.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Shahnaz, S., Singh, N. & Kataria, D. (2024). Relationship of Cognitive Emotional Regulation Strategies with Stress, Anxiety and Depression in Caregivers of Persons with Schizophrenia: A Hospital –Based Cross Sectional Study. *International Journal of Indian Psychology*, 12(2), 2317-2327. DIP:18.01.200.20241202, DOI:10.25215/1202.200