

THE INFLUENCE OF FAMILY-EXPRESSED EMOTION ON THE RISK OF RELAPSE IN PATIENTS WITH SCHIZOPHRENIA: OUTCOMES FROM A COMMUNITY MEDICINE INTERVENTION

Muhamad Bagus Wira¹, Sarah Nia¹, Ramidha Syaharani¹, Ezrin Syariman¹, Karindra Amadea¹, Anastasia Pearl¹, Khansa Talitha¹, Margarita Maria Maramis² 

¹Medical Student, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia.

²Department of Psychiatry, Faculty of Medicine, Universitas Airlangga – RSUD Dr. Soetomo, Surabaya, Indonesia

ABSTRACT

Schizophrenia is a syndrome characterized by fundamental deviations in thinking, perception, and affect. Expressed emotion (EE) is a crucial risk factor in influencing the occurrence of relapse. In Indonesia, there is still no community therapy activity related to the family EE against the risk of relapse of schizophrenia patients. This is the underlying need for community psychiatry activities against families of patients with schizophrenia and related parties. This cross-sectional study was conducted in Puri, Mojokerto, Indonesia. The method was divided into three stages: field introduction, community diagnosis, and community therapy. In 36 schizophrenia patients, it was found that the level of EE experienced by the patients was relatively low, and the risk of recurrence within one year was around 43.27%. Based on these findings, the families of schizophrenia patients in Puri District can express good positive emotions towards their patients, which is in line with the relatively low risk of relapse. The author did an EE assessment by sharing a questionnaire as a short-term evaluation of the occurrence of relapse. As a continuation of the program, long-term evaluation will be returned to the community health centre and carried out by the program holder. Community medicine benefits community health centers, communities, and students by increasing family and community awareness of schizophrenia and improving the quality of community health centers and public health. Students also learn how to educate families with schizophrenia.

How to cite:

Wira, M. B., Nia, S., Syaharani, R., Syariman, E., Amadea, K., Pearl, A., Talita, K., Maramis, M. M., 2025. The Influence of Family Expressed Emotions on the Risk of Relapse in Schizophrenia Patients: A Study of the Outcomes of Community Medicine Activities: Work With Community. Journal of Community Medicine and Public Health Research. 6(1): 29-38.



Open access under Creative Commons Attribution-ShareAlike 4.0 International License (CC-BY-SA)

Highlights:

1. Families of schizophrenia patients in Puri District express positive emotions, specifically in emotional over-involvement (EOI) and critical criticism (CC) dimension
2. Positive expressed emotion (EE) results in a lower risk of recurrence of schizophrenia within one year

ARTICLE HISTORY

Received: April, 24, 2024
Revision: August, 28, 2024
Accepted: October, 01, 2024
Online: June, 03, 2025

doi:
10.20473/jcmphr.v6i1.56949

KEYWORDS

Expressed emotion, schizophrenia relapse, and community psychiatry

Corresponding author

Margarita M. Maramis
✉ mmmaramis61@gmail.com
Department of Psychiatry,
Faculty of Medicine,
Universitas Airlangga, Dr.
Soetomo General Academic
Hospital, Surabaya, Indonesia.



INTRODUCTION

Schizophrenia is a chronic mental disorder characterized by cognitive impairment, delusions, hallucinations, abnormal thoughts, and irregular behavior. There are 24 million people worldwide suffering from Schizophrenia. Most symptoms of schizophrenia appear in their 20s and older adults, and are more common in men¹. Each region in Indonesia has different rates of schizophrenia incidence, one of which is in the Puri, Mojokerto, where 96 patients were diagnosed with Schizophrenia. Schizophrenic patients undoubtedly experience disability, which is often caused by negative symptoms (loss or deficit), cognitive impairment (disturbance in attention, memory), positive symptoms (suspicion, delusions, and hallucinations), and executive function disorders².

A total of 81.9% of schizophrenic patients experience relapses within five years after the first episode appears. Relapses are the return or worsening of the disease after the remission period³. There are several risk factors for schizophrenia relapses, including drug-taking compliance, interpersonal relationships, daily living ability, family communication, participation in therapy rehabilitation, and history of hospital admission in the past year. Among the factors that affect relapses, relationships with families become one of the crucial factors in determining prognosis compared to other factors⁴.

Expressed Emotion (EE) is interpreted as emotions expressed in the family environment between caregivers and schizophrenic patients and other psychiatric disorders. It has been found that EE can be used in predicting relapse symptoms or relapse in various mental disorders⁵. EE has five components: critical comments (CC),

hostility, emotional over-involvement (EOI), positive remarks, and warmth. CCs are influenced by negative evaluation and tone of voice when conveying their feelings (anger, rejection, irritability, ignorance, blame, negligence, etc.). EOI includes the feelings or actions of overprotecting and self-sacrificing from the family to the patient⁶. In Indonesia, there is still no community therapy activity related to the family EE against the risk of relapse of schizophrenia patients. This is the underlying need for community psychiatry activities against families of patients with schizophrenia and related parties.

Community Medicine activities held by the Faculty of Medicine, Universitas Airlangga, consist of three activities. The first is WWF (Work With Family), which aims to improve students' ability to enhance their individual and family health care. Each student in a team gets a specific case and then performs a comprehensive examination, home visits, and solutions related to the problem.

The second is WWHT (Work With Health Teams). The students are trained to perform holistic health care management in primary health care. The third is WWC (Work With Community), where this activity aims to improve health in the scope of the community. WWC is done through 3 stages: field recognition, community diagnosis, and community therapy.

MATERIALS AND METHODS

The method can be divided into three stages: field recognition, community diagnosis, and community therapy, which are completed within three weeks.

1. Community anamnesis in the form of field recognition

Researchers conducted interviews with the Puri Community Health Center to get a general picture of the problems in the Puri Community Health Center's working area. After learning about the high number of schizophrenia cases, researchers conducted a direct survey with the families of schizophrenia patients to assess the emotions expressed by the family towards the patient using the Family Questionnaire (FQ) questionnaire and the risk of recurrence for schizophrenia patients using the SMART Card. The FQ is a questionnaire that describes emotions and emotional behavior, or expressed emotion, that consists of 20 questions with the answer options never, rarely, often, and very often. The SMART card is a measuring tool resulting from research on The Biopsychocultural-spiritual factors influencing relapse of schizophrenic patients by Margarita M. Maramis, M. Sofyan Almahdy, and Atika⁷. This card contains 12 questions that help predict the risk, in percentage terms, of the likelihood of recurrence of adult schizophrenia within 1 year. Samples were taken by purposive sampling. The data obtained were analyzed univariately using SPSS-27.

2. Community Diagnosis

The workshop was held at the Mlaten, Puri, Mojokerto, Indonesia. Representatives from the Puri Community Health Center, Mental health cadres for villages spread across Puri District, village officials, psychiatry residents, and representatives from the patient's family attended. The results of the survey obtained at the field recognition stage were presented by representatives of young doctors, focusing on problems related to the expression of family emotions towards patients and the risk of recurrence of

schizophrenia patients in Puri, Mojokerto, Indonesia.

Cross-sector participants were divided into five groups to discuss risk factors and solutions to community problems. The discussion session ended with each participant filling in suggested solutions for the two things that had been discussed previously. The proposed suggestions were presented, and solutions were determined using the Nominal Group Technique (NGT) Delbecq method, followed by all cross-sector participants present. NGT is a structured group-based technique used to create an agreement. Participants were asked to answer questions individually based on predetermined, structured questions written by the facilitator. Next, participants were asked to prioritize ideas and suggestions issued by group members collectively⁸. There is one solution that is possible and agreed upon. This was followed by an oral and written Memorandum of Understanding (MoU) in the form of a commitment to consider the survey results that had been carried out through distributing questionnaire research instruments. The MoU results in a joint commitment to carry out community therapy to solve this problem. Community diagnosis is carried out as a short-term evaluation. The author did an EE assessment by sharing a questionnaire as a short-term evaluation of the occurrence of relapse. As a continuation of the program, long-term evaluation will be returned to the community health center and carried out by the program holder

3. Community Therapy

Following up on the Community Diagnosis that has been mentioned, community therapy seeks to implement solutions that have been mutually agreed upon, as well as additional strategies to

follow up on the diagnosis. The community therapies carried out were divided into three parts: presentations of material, leaflets related to schizophrenia and positive emotional expressions, and the creation of a link to the Self Rating Questionnaire (SRQ) as a mental health screening tool. WHO developed the SRQ, which has 20 items that ask respondents about symptoms and problems associated with mental health⁹.

The material presentation program is carried out using PowerPoint presentation media by psychiatrists in the local area. The material provided includes the definition of schizophrenia, types of schizophrenia, habits of patients with schizophrenia, as well as a discussion of each question in the FQ questionnaire, and examples of good treatment. This activity occurred at the Mlaten Village Hall, Puri District, Mojokerto Regency. Notes were made regarding the participants' activity and enthusiasm to establish a two-way relationship with the presenters. Also given were leaflets related to schizophrenia and emotional expression to participants and mental health cadres as reading material. Apart from that, a link to the SRQ questionnaire was given to the community health center to carry out screening for families of patients with schizophrenia, as well as other general patients.

RESULTS

1. Field Recognition

Table 1 shows characteristics of schizophrenia patient respondents, dominated by males aged 25-44 years old. Education background is mostly junior and senior high school, and not working because the patient is unable to work due to an inability to function socially. Fifty-five per cent of patients were not married,

followed by 25% married and the remaining 19% divorced.

Table 1 Characteristics Frequency Distribution of Schizophrenia Patient Respondent

Variables	N	Percentage (%)
Gender		
Male	24	66.7
Female	12	33.3
Age		
≤24 y.o	2	5.6
25-44 y.o	21	58.3
45-60 y.o	11	30.6
61-75 y.o	2	5.6
Last education		
Not graduated	3	8.3
Elementary school	9	25
Junior high school	12	33.3
Senior high school	12	33.3
Occupation		
Not working	21	58.3
Housewives	8	22.2
Entrepreneur	1	2.8
Others (workers, farmers)	6	16.7
Marital status		
Not married	20	55.6
Married	9	25
Divorced	7	19.4

Table 2 FQ Category Distribution

Category	Critical Comments (CC)	Emotional-Over Involvement (EOI)
Low	26 (72.2%)	34 (94.4%)
High	10 (27.8%)	2 (5.6%)
Total	36 (100%)	36 (100%)

Table 2 shows that the family of schizophrenia patients in Puri District expresses emotion well to family members with schizophrenia. This is evidenced by low scores for both categories, 72.2% for CC and 94.4% for EOI. Meanwhile, the average score earned from SMART cards was 4.08 of the total score of 16, showing

the risk of a recurrence was about 43.27% within 1 year.

2. Community Diagnosis

Based on the results of the preliminary survey, a community diagnosis was formulated related to the high expression of emotions expressed by families of schizophrenic patients in the Puri sub-district regarding the risk of recurrence of schizophrenic patients. The workshop will be held at Mlaten, Puri, Mojokerto. Puri Community Health Center representatives attended the event, the Mental Health cadre for the village spread in Puri District, village employees, Psychiatry residents of Universitas Airlangga, and representatives from the patient's family.

The survey results obtained at the field recognition stage were presented by the representative of the clinical years medical students, focusing on the problems found in Puri District related to FQ scores. Then, cross-sector participants were divided into five groups to discuss risk factors and solutions to community problems.

Material presentation as the community therapy obtained from participants presented at workshops continued by determining solutions using the NGT Delbecq method, followed by all cross-sectoral participants. The first problem related to the highly expressed emotion in the family of patients with schizophrenia in Puri District. The participants chose four leading solutions:

1. Teach family emotional control
2. Emotional and spiritual support from the family
3. Skill training for schizophrenic patients

4. Improve Integrated Health Center/*Posyandu* visits and doctor consultations

As for the second problem about the relapse risk of schizophrenia is obtained three solutions:

1. Improve the quality of relationships so that families are more attentive
2. Family as the medication supervisor
3. Teach the family communication techniques so that patients can give opinions and not offend each other.

Of the four best problem-solving proposals, conclusions were made, and one agreed solution was the best problem-solving obtained from participants. Furthermore, the Memorandum of Understanding (MoU) was continued orally as a commitment to considering research results conducted through the spread of questionnaire research instruments. The MoU results are a joint commitment to conduct community therapy to solve the problem.

3. Community Therapy

The agreed solution is training and counseling for the families of schizophrenia patients. The form of counseling is a presentation about expressing emotions in the patient's family and training about effective communication techniques. Leaflets are distributed to the soul cadre so that further counseling can be carried out.

The material presentation was attended by 22 participants, comprising six representatives from the patient's family, six from Puri Community Health Center, and 10 mental health cadres from the village spread in Puri District. Counseling the mental health cadres and families of schizophrenic patients to raise awareness and public knowledge of mental health, especially schizophrenia, the importance of the family role in maintaining good

communication in family environments, and mindfulness therapy. Their activity reflects the participants' enthusiasm to ask and answer directly from the source.

The link for the SRQ questionnaire is also given to Puskesmas Puri representatives to facilitate the data recording and evaluation process. It is expected that this screening can be done periodically for families with schizophrenia patients with schizophrenia as a mental health screening. Community therapy evaluation was assessed qualitatively through the active questioning and discussion of two-way participants and quantitatively through the attendance of 88% of the target, 100% leaflet distribution, and no participants leaving the room before the event was completed.

DISCUSSION

Expressed emotion (EE) is a family habit and behavioral measurement tool for people with schizophrenia. The higher EE numbers with the most frequent domain of critical criticism increase the risk of early relapse (less than 12 months)¹⁰. The tendency of caregivers to criticize and hostility affects the condition of the patient through the use of their tone to convey feelings (anger, rejection, irritability, ignorance, blame, negligence, etc.), self-blame, overprotecting the patient, paying too much attention to the patient, ignoring the personal needs of himself and others⁶.

Expressed emotion itself includes three dimensions: emotional over-involvement (EOI), critical criticism (CC), and hostility, one of the usable measurements of the Family Questionnaire (FQ). FQ can only assess two dimensions: EOI and CC. The most critical dimensions in the EE increase differ based on local

culture. For example, a Brazilian study showed that high EE is linked with higher levels of EOI compared to CC. This contrasts with a few studies from Asia, including China, India, Malaysia, and Pakistan, which showed a higher value of CC than EOI⁶.

For dimensions other than EOI, the community is very respectful and accustomed to local culture, so violations of this culture will increase scores of criticism and hostility. EOI describes the excessive emotional and overprotective responses of parents to children so that children become highly dependent, including psychologically, which can reduce the patient's ability to become independent, and there is a risk that patients will depend on the family continuously⁶. A caregiver with a high level of EOI in a family of psychiatric patients has a higher level of emotional load, which is possible because the family experiences more significant emotional dysregulation in maintaining emotional engagement and encouraging a higher perception of loads in the parenting process¹¹. EOI itself can be assessed as positive or negative, depending on perspective. Patients consider this affection, but some find it annoying and feel treated as a child. The community stigma can cause high EE scores¹².

Based on the results, we found that high EE impacts the risk of relapse in patients with schizophrenia; this is in line with the research of Yimam et al., who found that there is a high level of EE in caregivers, which indicates an increase in schizophrenia recurrence⁵. Based on Sariah et al., 2014 several factors can affect relapse, including personal and environmental factors. Individual risk factors include non-compliance with antipsychotic treatment and substance

abuse¹³. Environmental risk factors include inadequate family support and stressful life events. Personal protective factors are compliance with antipsychotic, occupational, and religious treatment. Environmental protective factors include family support, partner support, community home visits, psychoeducation, and relationship therapy.

The presence of families with schizophrenia affects the role and interaction in the family, in which case it is essential to understand that schizophrenia is included in chronic diseases¹⁴. Family plays a role in patients' daily life, such as overseeing treatment, assisting with health care, and treating patients. In the long-term treatment of schizophrenic patients, families can have long-term problems that, if not given support and coping strategies, have an impact on the high EE numbers in the form of negative attitudes toward patients. This then causes neglect, which results in relapse¹⁵.

Providing material containing definitions, types of schizophrenia, examples of daily routines, and relapse triggers in schizophrenia patients increased the public's knowledge regarding schizophrenia. Apart from that, efforts were also made to share information through leaflets as a medium that is easier to access and distribute to people absent from the community therapy sessions. This leaflet was distributed to mental health cadres for their use and families of schizophrenia patients, and some were kept at the Puri Community Health Center for the general public.

Apart from knowledge related to schizophrenia, knowledge of comprehending emotions in mindfulness has also shown an increment. Mindfulness is a condition called full awareness, namely

a state of mind that focuses on recognizing the situation at any given moment, including what people and objects in the surroundings feel. This method will bring attention to the focus on the present, which will help a person to recognize and appreciate the thoughts, emotions, and feelings of others. Mindfulness therapy, also known as mindfulness-based interventions or mindfulness meditation, has been proven to change the function and structure of the brain, which plays a role in providing attention and regulating emotions. This condition will help a person observe, describe, act with complete awareness, experience without judging, and act without personal judgment¹⁶. This psychoeducation can also reduce family EE, especially over-involvement¹⁷.

Harmonious family conditions will establish positive communication and interaction, reducing conflicts. According to Andayani, six family characteristics can be categorized as a healthy and happy family in Javanese¹⁸. These include:

1. Love and marital commitments, which reflect upon the role of caring husband and wife, bring in a pleasant, comfortable, and supportive atmosphere
2. A positive communication style includes positive feelings (love, care, and respect), sharing, listening, and responding.
3. Familial processes, portrayed by mutual interactions that fulfill one's psychological needs and keep the family functioning optimally

In Indonesia, close, "harmonious" and "unity" cultures belong to families, which is reflected mainly in Javanese culture, to avoid conflict, mutual respect, and the importance of maintaining family relationships. In this context, Indonesians

also tend to communicate, share, and value emotional communication with each other¹⁹. Psychotic illnesses in Indonesian families are thought to be caused by psychological, physiological, and supernatural problems. Families facing patients with psychiatric disease with tolerance and accepting aggressive attitudes to maintain the culture of “peace” (*tentrem*) and avoid inter-family conflicts²⁰.

The family burden in caring for a family member with schizophrenia includes physical, mental, social, and economic aspects. This can cause damage to their psychological well-being, such as depression, anxiety, and disorders. They will also feel anger, guilt, fear, despair, sadness, and negative attitudes towards patients. It should be remembered that schizophrenia patients require 24-hour home care²¹. Family members are responsible for individual basic activities (such as bathing and eating), giving and ensuring the medication is consumed, household chores, and other functional tasks. Sometimes, families are affected due to the responsibility of caring for the patient, such as losing their jobs, lessening social activities, and being prevented from carrying out recreational activities due to the heavy workload²². This causes caregivers to have a lower quality of life and relatively higher depression scores²³. Therefore, local health officials need to perform a routine mental health screening for schizophrenia caregivers of people with schizophrenia.

In response, the Puri Community Health Center has assisted the families by collecting the prescribed medications, which can only be taken in local hospitals in town, and distributing medicines by village mental health cadres to each house. This aims to reduce the burden on

caregivers and allocate at least one mental health care professional per village. The author also created a questionnaire link for mental health screening to simplify the screening process, which is expected to be carried out by mental health cadres regularly. The author did an EE assessment by sharing a questionnaire as a short-term evaluation of the occurrence of relapse. As a continuation of the program, long-term evaluation will be returned to the community health center and carried out by the program holder.

Strengths and limitations

The strength of our study lies in its community-based, participatory approach that involves families, healthcare workers, and students in both assessment and intervention phases, enhancing local awareness and providing a realistic evaluation of expressed emotion (EE) and relapse risk using validated tools and structured group techniques. However, its cross-sectional design, short-term evaluation, small sample size (36 patients), and focus on a single district in Indonesia limit the ability to infer causality, assess long-term outcomes, and generalize the findings to broader populations.

CONCLUSION

It was found that families of schizophrenia patients can express good positive emotions towards the patient, as evidenced by the low average FQ scores for both CC and EOI dimensions. The risk of recurrence for schizophrenia patients in the first year is relatively low, with a percentage of 43.27% based on the SMART card score. On the other hand, community therapy was implemented aiming to increase the positive expressions of families of patients with schizophrenia through

discussing each element of the questions in the FQ questionnaire, as well as by teaching mindfulness methods.

ACKNOWLEDGMENT

The University of Airlangga fully supports this research. Thank you to the Puri Community Health Center, Puri District, and the community health center's cadres for their help in this activity.

CONFLICT OF INTEREST

All Authors have no conflict of interest.

ETHICS CONSIDERATION

This research has received an ethical certificate from the Health Research Ethics Committee, Faculty of Medicine, Airlangga University, with approval number 56/EC/KEPK/FKUA/2024, dated February 26, 2024, granted by Dr. Soebagjo Adi Soelistijo, dr., Sp.PD., K-EMD., FINASIM., FACP.

AUTHOR CONTRIBUTION

All authors have contributed to all processes in this research, including preparation, data gathering, analysis, drafting, and approval for publication of this manuscript.

REFERENCES

1. World Health Organization. Schizophrenia. World Health Organization; 2022. Available from: <https://www.who.int/news-room/fact-sheets/detail/schizophrenia>
2. Srisudha B, Kattula D, Devika S, Rachana A. 2022. Cognitive dysfunction and disability in people living with schizophrenia. *Journal of Family Medicine and Primary Care*, 11(6):2356. DOI: [10.4103/jfmmpc.jfmmpc_396_21](https://doi.org/10.4103/jfmmpc.jfmmpc_396_21)
3. Iliades, Schizophrenia Relapse: What to Know. 2014.. Available from: <https://www.everydayhealth.com/hs/schizophrenia-caregiver-guide/recognizing-and-preventing-relapse/>.
4. Mi W-F, Chen X-, Fan T-T, Tabarak S, Xiao J-B, et al. 2020. Identifying modifiable risk factors for relapse in patients with schizophrenia in China. DOI: [10.3389/fpsyt.2020.574763](https://doi.org/10.3389/fpsyt.2020.574763)
5. Yimam, B, Soboka, M, Getachew, Y et al. 2022. Expressed emotion of caregivers among schizophrenic patients visiting Jimma University Medical Center Psychiatry Outpatient Unit, Southwest Ethiopia. *Ann Gen Psychiatry*, 21(27). DOI: [10.1186/s12991-022-00404-3](https://doi.org/10.1186/s12991-022-00404-3)
6. Zanetti ACG, Vedana KGG, Pereira CCM, et al. 2019. Expressed emotion and socio-demographic and clinical factors in families of Brazilian patients with schizophrenia. *International Journal of Social Psychiatry*, 65(1):56-63. DOI: [10.1177/0020764018815207](https://doi.org/10.1177/0020764018815207)
7. Maramis MM, Almahdy MS, Atika. 2020. 'SMART' Card to Predict Recurrence in Schizophrenic Patients. Airlangga University. DOI: [10.1177/00207640211065678](https://doi.org/10.1177/00207640211065678)
8. Hugé, J., & Mukherjee, N. (2018). The nominal group technique in Ecology & Conservation: Application and challenges. *Methods in Ecology and Evolution*, 9(1), 33–41. DOI: [10.1111/2041-210x.12831](https://doi.org/10.1111/2041-210x.12831)
9. Do TTH, Bui QTT, Ha BTT, Le TM, Le VT, Nguyen QT, Lakin KJ, Dang TT, Bui LV, Le TC, Tran ATH, Pham HTT, Nguyen TV. 2023. Using the WHO Self-Reporting Questionnaire-20 (SRQ-20) to Detect Symptoms of Common Mental Disorders among Pregnant Women in Vietnam: a Validation Study. *Int J Womens Health*, Apr 14;15:599-609. DOI: [10.2147/IJWH.S404993](https://doi.org/10.2147/IJWH.S404993)

10. Ma C F, Chan SKW, Chung YL, Ng SM, Hui CLM, Suen YN, & Chen EYH. 2021. The predictive power of expressed emotion and its components in relapse of schizophrenia: a meta-analysis and meta-regression. *Psychological Medicine*, 51(3), 365–375.
DOI: [10.1017/S0033291721000209](https://doi.org/10.1017/S0033291721000209)
11. Bailey RC, Grenyer BFS. 2014. The relationship between expressed emotion and well-being for families and carers of a relative with borderline personality disorder. *Personality and Mental Health*, Sept 4;9(1):21–32.
DOI: [10.1002/pmh.1273](https://doi.org/10.1002/pmh.1273)
12. Ghosh R & Ahmed N. 2019. A study to Assess the Relationship between Stigma and Expressed Emotion Among the Primary Caregivers of Persons with Schizophrenia Attending Outpatient Department of Lokopriyo Gopinath Bordoloi Regional Institute of Mental Health Tezpur. *Indian Journal of Psychiatric Nursing*, 1(16), 2-6. DOI: [10.4103/IOPN.IOPN_5_19](https://doi.org/10.4103/IOPN.IOPN_5_19)
13. Sariah AE, Outwater AH, Malima KI. 2014. Risk and protective factors for relapse among individuals with schizophrenia: A qualitative study in Dar es Salaam, Tanzania. *BMC Psychiatry*, Aug 30;14(1). DOI: [10.1186/s12888-014-0240-9](https://doi.org/10.1186/s12888-014-0240-9)
14. Shamsaei F, Cheraghi F, Bashirian S. 2015. Burden on Family Caregivers Caring for Patients with Schizophrenia. *Iran J Psychiatry*, Sep;10(4):239-45
<https://ijps.tums.ac.ir/index.php/ijps/article/view/576>
15. Caqueo-Úrizar A, Rus-Calafell M, Urzúa A, Escudero J, Gutiérrez-Maldonado J. 2015. The role of family therapy in the management of schizophrenia: challenges and solutions. *Neuropsychiatr Dis Treat*, Jan 14;11:145-51.
DOI: [10.2147/NDT.S51331](https://doi.org/10.2147/NDT.S51331)
16. Guendelman S., Medeiros S., Rampes H. (2017). Mindfulness and Emotion Regulation : Insights from Neurobiological, Psychological and Clinical Studies. *National Library of Medicine. Front Psychol*.1.
DOI: [10.3389/fpsyg.2017.00220](https://doi.org/10.3389/fpsyg.2017.00220)
17. Zhang ZJ, Lo HH, Ng SM, Mak WW, Wong SY, Hung KS, et al. 2023. The effects of a mindfulness-based family psychoeducation intervention for the caregivers of young adults with first-episode psychosis: A randomized controlled trial. *International Journal of Environmental Research and Public Health*, Jan 5;20(2):1018.
DOI: [10.3390/ijerph20021018](https://doi.org/10.3390/ijerph20021018)
18. Andayani B., Ancok D., Wulan R. 2018. From Love to Family Happiness: a Theoretical Model for Javanese Family. *European Journal of Social Science Education and Research, Sciendo*; 5(1), 25-35. DOI: [10.2478/ejser-2018-0003](https://doi.org/10.2478/ejser-2018-0003)
19. Yu L. 2022. Analysis of “harmony” and “Unity” concepts in Indonesian and Chinese culture. *MANDARINABLE: Journal of Chinese Studies*, Aug 12;1(1):10–6.
DOI: [10.20961/mandarinable.v1i1.326](https://doi.org/10.20961/mandarinable.v1i1.326)
20. Subandi MA, Praptomojati A, Marchira CR, DelVecchio Good M-J, Good BJ. 2020. Cultural explanations of psychotic illness and care-seeking of family caregivers in Java, Indonesia. *Transcultural Psychiatry*, Apr 14;58(1):3–13.
DOI: [10.1177/1363461520916290](https://doi.org/10.1177/1363461520916290)
21. Millier A, Schmidt U, Angermeyer MC, Chauhan D, Murthy V, Toumi M, et al. 2014. Humanistic burden in schizophrenia: A literature review. *J Psychiatr Res*, 54, 85–93. DOI: [10.1016/j.jpsychires.2014.03.021](https://doi.org/10.1016/j.jpsychires.2014.03.021)
22. Tamizi Z, Fallahi-Khoshknab M, Dalvandi A, Bakhshi E, Mohammadi E, Mohammadi-Shahboulaghi F. 2020. Caregiving burden in family caregivers of patients with schizophrenia: A qualitative study. *Journal of Education and Health*

- Promotion, Jan;9(12).
DOI: [10.4103/jehp.jehp_356_19](https://doi.org/10.4103/jehp.jehp_356_19)
23. Lee Y. Bierman A., Penning M. dan Kemp C. (2020). Psychological well-being among informal caregivers in the Canadian longitudinal study on aging: why the location of care matters. *The Journals of Gerontology: Series B*, 75(10), 2207–2218. DOI: [10.1093/geronb/gbaa159](https://doi.org/10.1093/geronb/gbaa159)