International Journal of Recent Advances in Multidisciplinary Topics
Volume 7, Issue 8, August 2026
www.ijramt.com | E-ISSN: 2582-7839 | RESAIM Publishing | www.resaim.com

Randomised Controlled Trial on the Effect of Psychoeducation on Expressed Emotion of Caregivers of Individuals with Schizophrenia and its Association with Patient Outcome in Maiduguri, Northeastern Nigeria

Suleiman Awwal Muhammed[1*], Nada Abdulwahab Said[1], Abdulrahman Ashiru[2], Bello Umar[3], Shefa'atu Shehu[4], Fatima Gambo Kaigama[1], Jidda Mohammed Said[1,5], Musa Abba Wakil[1,5]

[1]*Department of Mental Health, University of Maiduguri Teaching Hospital, Maiduguri, Nigeria*
[2]*Department of Medical Services, Federal Neuropsychiatric Hospital, Maiduguri, Nigeria*
[3]*Department of Community Medicine, University of Maiduguri Teaching Hospital, Maiduguri, Nigeria*
[4]*Department of Community Medicine, Ahmadu Bello University Teaching Hospital, Zaria, Maiduguri, Nigeria*
[5]*Department of Psychiatry, College of Medical Sciences, University of Maiduguri, Maiduguri, Nigeria*

***Abstract*: Schizophrenia affects about 24 million people worldwide, representing 1 in 300 individuals (0.32%). A 2010 Nigerian study reported a lifetime prevalence of 2.1%. Although relatively low, the disorder imposes a significant and growing burden on healthcare systems in low- and middle-income countries due to population growth and aging. Despite treatment advances, relapse rates remain high, influenced by prolonged illness duration, medication non-adherence, substance use, stressful life events, comorbid mental illness, and psychosocial factors such as expressed emotion (EE). High EE, marked by critical comments, hostility, and emotional over-involvement from caregivers, is strongly linked to relapse in schizophrenia and evidence indicates that psychoeducation reduces high EE. Thus, family psychoeducation is a vital intervention to lower relapse rates and ease the global schizophrenia burden. The aim of the study is to evaluate the effect of psychoeducation on the level of expressed emotion among caregivers of individuals with schizophrenia and its associated patient outcome. The study was a randomized controlled trial to evaluate the effect of psychoeducation on caregiver EE levels and patient outcomes among individuals with schizophrenia attending the Federal Neuropsychiatric Hospital, Maiduguri. Sixty-two patient-caregiver pairs, diagnosed using the MINI, were randomized into intervention and control groups via permuted block randomization. Baseline assessments employed the Levels of Expressed Emotion Scale (LEES) and Positive and Negative Syndrome Scale (PANSS). The intervention group participated in three sessions of family psychoeducation, while the control group received standard treatment. Post-intervention assessments were conducted at 2 weeks and 6 months. The prevalence of high expressed emotion (EE) was 53.2%. Psychoeducation significantly reduced EE levels after 2 weeks compared with the control group (mean difference = 9.00, $p < 0.001$; Cohen's $d = 1.001$). However, relapse rates (3.2%) did not differ significantly between the groups after 6 months. Family psychoeducation effectively reduced EE and may improve caregiver and patient outcomes.**

***Keywords*: Schizophrenia, Family-Psychoeducation, Expressed Emotion, Caregivers, Relapse, Randomized Controlled Trial, Nigeria.**

1. Introduction

Schizophrenia is a complex brain disorder that affects an individual's perception of the world, thinking, and actions. It presents with symptoms of hallucinations, delusions, disorganized speech and behaviour, and impairment of cognition; usually with onset in adolescence and early childhood [1]–[3]. It is one of the most disabling mental illnesses, affecting approximately 24 million people globally [4]. In Nigeria, a lifetime prevalence of 2.1% has been reported [5]. The disorder contributes significantly to disability-adjusted life years (DALYs), loss of productivity, and social stigma [4], [6].

Despite pharmacological and psychosocial advances, relapse rates remain high, with up to 60% of patients experiencing relapse within one year of treatment [7]. Relapse not only worsens prognosis but also leads to increased hospitalization, poor functioning, and caregiver burden. Among the psychosocial factors influencing relapse, expressed emotion (EE), a measure of family members' attitudes and behaviours toward a relative with schizophrenia, plays a crucial role. High EE is defined by frequent critical comments, hostility, or excessive emotional involvement and has been shown to predict relapse across cultures [8], [9].

However, EE is shaped by cultural context. In collectivist societies such as Nigeria, where family cohesion and caregiving are central, emotional involvement may not always be detrimental. Yet, stigma, myths, and limited understanding of

*Corresponding author: awwalmakusidi@gmail.com

mental illness often foster negative emotional climates within families. Nigerian studies [10], [11] have found high EE among caregivers of individuals with schizophrenia, but none have explored psychoeducational interventions to reduce EE in northern Nigeria.

Psychoeducation provides information about mental illness, treatment adherence, stress management, and coping skills. When delivered to families, it improves knowledge, reduces EE, enhances medication adherence, and can lower relapse rates. Evidence from other low- and middle-income countries supports its feasibility and effectiveness [12], [13]. This study, therefore, aimed to evaluate the effect of family psychoeducation on the level of expressed emotion among caregivers of individuals with schizophrenia and its association with relapse in Maiduguri, northeastern Nigeria.

2. Materials and Methods

Study Design and Setting: This was a randomized controlled trial conducted at the Federal Neuropsychiatric Hospital (FNPH), Maiduguri, one of Nigeria's eight tertiary mental health institutions serving Borno and neighbouring states. The study was carried out between February and October 2024.

Participants: The study population comprised patients diagnosed with schizophrenia and their primary caregivers attending the adult outpatient clinic. Diagnosis was confirmed using the Mini International Neuropsychiatric Interview (MINI-7).

Inclusion criteria required patients aged 18–60 years with schizophrenia and caregivers (≥18 years) who had lived with the patient for at least six months, spending ≥35 hours per week together. Patients with intellectual disability, those with unstable physical health conditions, and those with additional psychiatric disorders were not included in the study. Caregivers who had a current psychiatric condition or who had previously received psychoeducation were also excluded.

Sample Size estimation and Sampling technique: Using parameters from prior studies, 62 patient–caregiver pairs (31 per arm) were recruited. Non-probability sampling methods were employed; a combination of self-selection (volunteer) sampling and homogeneous purposive sampling was utilized.

Randomization and Blinding: Randomization was performed using permuted block sequences (block sizes of 4 and 6) to ensure group balance. Minimization techniques adjusted for potential confounders such as marital status. Participants and outcome assessors were blinded to group allocation.

Intervention: The intervention group received three 60-minute weekly sessions of family psychoeducation, conducted by trained facilitators using a standardized Hausa-translated manual. The sessions focused on: Understanding schizophrenia and its treatment; managing expressed emotion and stress; and enhancing communication and problem-solving skills.

The control group received treatment-as-usual (TAU) and a placebo health education session after the study to ensure ethical equity.

Instruments: The following instruments were used in the study.

1. Socio-demographic Questionnaire: A structured, predesigned questionnaire was used to collect participants' socio-demographic and clinical information. Socio-demographic variables included age, sex, ethnicity, educational level, relationship to the patient, and other relevant characteristics, while clinical variables included the duration of illness, duration of treatment, and the number of previous hospital admissions.
2. Mini International Neuropsychiatric Interview (MINI)-7 Scale: The MINI is a brief, structured diagnostic interview that is among the most widely used psychiatric diagnostic instruments worldwide. It can be administered in approximately 15 minutes and was used in this study to reconfirm the diagnosis of schizophrenia among participants attending the outpatient clinic.
3. Level of Expressed Emotion Scale (LEES): It is 60-item self-administered questionnaire that assesses four domains of expressed emotion: intrusiveness, emotional response, attitude toward illness, and tolerance. It demonstrates excellent psychometric properties, including strong construct validity, reliability, and internal consistency (Cronbach's α = 0.95), with performance that is independent of age, sex, and frequency of contact. The instrument has been widely used and validated in various clinical and research settings in Nigeria.
4. Positive and Negative Syndrome Scale (PANSS): Positive and Negative Syndrome Scale of Schizophrenia (PANSS) is a commonly used 30-item clinician-rated measure.It has 3 domains: Positive, Negative, and General psychopathology. Positive and negative symptoms scales have 7 items each, while General psychopathology has 16 items, making a total of 30 items. A 7-point symptom severity proportional scale is used to rate each of the 30 total items. The internal consistency of the three scales is 0.79, 0.73, and 0.83, respectively. This instrument was used to establish a baseline score of symptom severity and to objectively assess relapse in patients after 6 months of intervention, and then corroborated with patients' files. (relapse was defined as ≥12-point increase or PANSS ≥75).

A. Data Analysis

Data were analyzed using SPSS version 27. Descriptive statistics (means, SDs, and percentages) characterized respondents. Independent t-tests compared mean EE and PANSS scores between groups, while paired t-tests compared pre- and post-test differences. Statistical significance was set at $p \leq 0.05$. Cohen's d was calculated to determine the effect size.

Ethical Considerations: Ethical clearance was obtained from the Human Research Ethics Committee, FNPH Maiduguri (Ref: FNPH/062023/REC137). Written informed consent was obtained from all participants. Confidentiality and voluntary participation were ensured.

3. Results

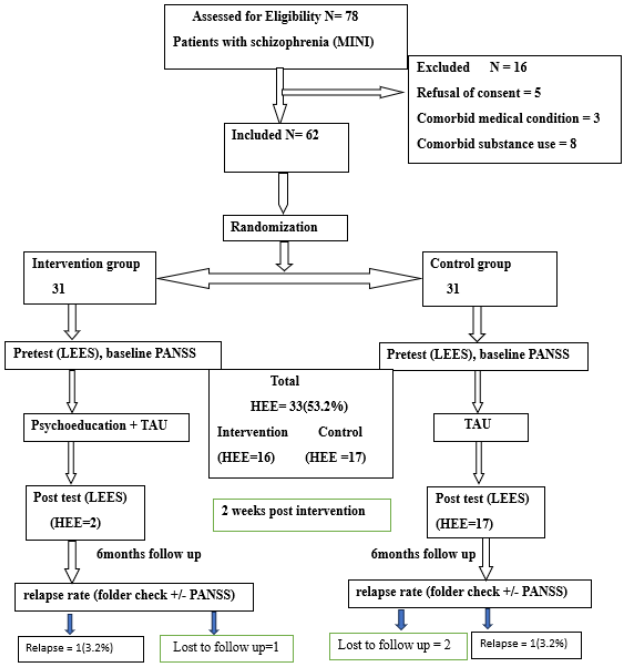

Fig. 1. Consort flowchart showing the different stages of the participants through the study

Table 1
Sociodemographic characteristics of patient respondents

Variable		Frequency (N=62)	Percentage (%)
Age (years) Mean (SD) 36.98(±10.79)	≤25	10	16.1
	26-35	17	27.4
	36-45	21	33.9
	46-55	10	16.1
	≥56	4	6.5
Sex	Male	37	59.7
	Female	25	40.3
Marital status	Single	23	37.1
	Married	28	45.2
	Divorced/separated	8	12.9
	Widowed	3	4.8
Employment status	Not gainfully Employed	34	54.8
	Gainfully Employed	28	45.2
Religion	Islam	58	93.5
	Christianity	4	6.5
Ethnicity	Kanuri	31	50.0
	Shuwa	6	9.7
	Fulani	7	11.3
	Others*	18	29.0
Highest Formal Educational level	None	26	41.9
	Primary	4	6.5
	Secondary	14	22.6
	Tertiary	18	29.0
Caregiver	Parents	21	33.9
	Spouse	21	33.9
	Both	3	4.8
	Others†	17	27.4

Others*- Hausa, Babur, Marghi, Chibok, Kilba, Gwoza,
Others †- Brother, Sister, Uncle, Aunt

The mean age of the patients was 36.98 ± 10.79 years. They were predominantly male (59.7%) and unemployed (54.8%). 37.1% were married, while others were either single, divorced/separated or widowed.

Table 2
Illness-related variables of the patient respondents

Variable		Frequency (N=62)	Percent (%)
Illness duration (years) Mean (SD)-11.8 (±6.4)	< 10	23	37.1
	10-20	32	51.6
	>20	7	11.3
Treatment duration (years) Mean (SD)-10.11(±6.597)	< 10	28	45.2
	10-20	29	46.8
	>20	5	8.1
Number of relapses	None	17	27.4
	1 to 2 previous relapses	26	41.9
	3 or more previous relapses	19	30.6
Number of hospital admissions	None	40	64.5
	1 previous admission	13	21.0
	More than 1 previous admission	9	14.5

The mean duration of illness was 11.8 ± 6.4 years, and 72.6% had experienced at least one previous episode of relapse. Most patients (64.5%) had no previous hospital admission.

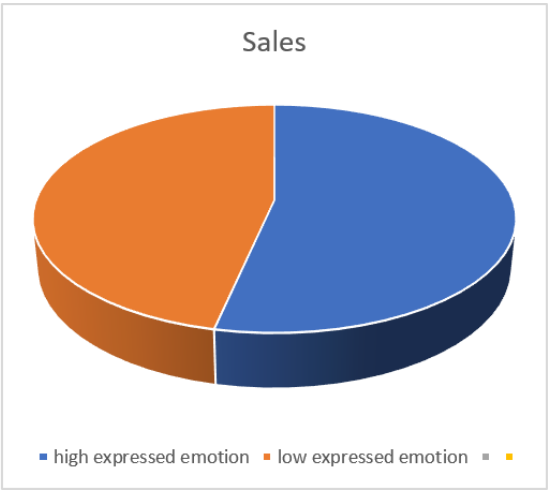

Fig. 2. Prevalence of high expressed emotion

Overall, 53.2% of caregivers exhibited high EE at baseline.

At two weeks post-intervention, caregivers in the psychoeducation group showed a significant reduction in mean EE scores (mean difference = 9.00, $p < 0.001$), whereas the control group showed no significant change. The calculated

Table 3
Effect of intervention on the level of expressed emotion 2 weeks post-intervention in both groups

LEES		Mean (SD)	MD	Paired t-test df 30	P-value ≤0.05	Effect size (Cohen's d)
Intervention	**Pre-test**	12.35(11.13)	9.00	5.575	<0 .001	1.001
	Post-test	3.35(2.89)				
Control	**Pre-test**	13.10(11.53)	-0.774	-1.647	0.110	-0.296
	Post-test	13.87(11.28)				

Table 4
Comparison of post-test domains of level of expressed emotion scale between the intervention and control groups

Domains		Sum	Mean score	Standard deviation	Independent t-test, df =60	P value ≤0.05
Intrusiveness	Intervention	43	1.39	1.20	-6.750	<0.001*
	Control	173	5.58	3.24		
Emotional response	Intervention	19	0.61	0.84	-4.222	<0.001*
	Control	93	3.00	3.03		
Attitude towards illness	Intervention	21	0.68	0.95	-2.932	0.005*
	Control	76	2.45	3.23		
Tolerance	Intervention	23	0.74	1.06	-3.382	<0.001*
	Control	97	3.13	3.78		
Total LEE	Intervention	104	3.35	2.89	-5.028	<0.001*
	Control	430	13.87	11.28		

*Statistically significant

Table 5
Comparison of PANSS score between intervention and control group 6 months after intervention

	Number	Mean	Standard deviation	Standard error	Independent Test (df 57)	P-value ≤0.05
Intervention	30	33.23	8.357	1.526	T= -0.369	0.445
Control	29	35.62	7.894	1.466		

effect size was large (Cohen's d = 1.001), indicating a substantial impact of psychoeducation in lowering EE.

All domains of the LEES, including the total LEES score, demonstrated statistically significant differences between the intervention and control groups. An independent samples t-test revealed a significant difference in the mean total LEES scores between the two groups, $t(60) = -5.028$, $p < .001$.

Within the specific domains, the Intrusiveness subscale showed a significant group difference, $t(60) = -6.750$, $p < .001$. Statistically significant differences were also observed in the Emotional Response domain ($t(60) = -4.222$, $p < .001$), the Attitude Towards Illness domain ($t(60) = -2.932$, $p = .005$), and the Tolerance domain ($t(60) = -3.382$, $p < .001$).

At six months post-intervention, relapse occurred in 3.2% of patients in both groups, showing no significant difference. PANSS score comparison between intervention and control groups also revealed no statistical difference ($p = 0.445$).

4. Discussion

The study found a high prevalence of high expressed emotion (HEE), with slightly more than half of the caregivers meeting the criteria for HEE. This finding is consistent with reports from Kano (52%) (11) and one Ethiopian study (50.5%) (14), but higher than those reported in Lagos (46%) (15)and in another Ethiopian study (43.6%) (16). Also, it was lower than the 80.6% observed in Delta State(10). These differences likely result from variations in methodology and cultural context. While this study and the Kano study used the Level of Expressed Emotion Scale (LEE), which is self-reported and less detailed, the Delta study employed the more comprehensive Camberwell Family Interview, which captures both verbal and non-verbal emotional dynamics (17). Socio-cultural factors, particularly the differing family and social values between Northern and Southern Nigeria, may also explain the observed disparities, consistent with evidence of cross-cultural variability in expressed emotion (18,19).

Two weeks after the family psychoeducation intervention, post-intervention assessment with the LEES demonstrated a substantial reduction in high expressed emotion (HEE) among participants in the intervention group, with the number of caregivers classified as having HEE decreasing from 16 to 2. In contrast, the prevalence of HEE in the control group remained unchanged at 17 participants. Mean scores across all LEES domains (intrusiveness, emotional response, attitude towards illness, and tolerance) also declined significantly in the intervention group but not in the control group. The greatest improvement occurred in the Intrusiveness domain, indicating reduced emotional overinvolvement by caregivers, consistent with findings by Kochumon et al. (2024) (20) and Kumari, Ali and Paul (2024) (21). Overall, psychoeducation effectively lowered expressed emotion and improved caregiver behaviours critical to patient recovery, in line with findings by previous studies (22–24). There was a clear and meaningful drop in LEES mean scores within the intervention group, with a large effect size (1.001), while the control group showed no noteworthy change.

Sociodemographic characteristics did not alter the impact of the intervention, indicating that the decrease in expressed emotion was consistent across these factors.

The lack of difference in relapse rates at six months contrasts with findings from longer-term studies (25,26), which reported decreased relapse after 9–12 months. The short follow-up period and inclusion of clinically stable outpatients likely contributed to the absence of significant relapse reduction. It is also plausible that the intensity and duration of the psychoeducation sessions were insufficient to influence long-term relapse trajectories (25,27).

Nonetheless, the strong effect size indicates meaningful behavioural and attitudinal change among caregivers, a critical step toward sustained patient improvement. The findings underscore the importance of integrating structured psychoeducation into standard psychiatric care, particularly in resource-limited settings where family members play key caregiving roles.

5. Conclusion

This randomized controlled trial provides evidence that brief multiple-family psychoeducation effectively reduces expressed emotion among caregivers of patients with schizophrenia in Maiduguri. Although short-term relapse rates were unchanged, the reduction in EE suggests potential for long-term benefits in family relationships and patient outcomes.

Incorporating structured psychoeducation into routine outpatient care can strengthen community mental health systems, reduce caregiver burden, and enhance recovery-oriented practice in schizophrenia management.

The Limitations of this study are that the follow-up period was limited to six months, possibly insufficient to detect differences in relapse. The sample comprised clinically stable outpatients, limiting generalizability to acute cases. And the study was conducted at a single site with a relatively small sample size.

Future studies should employ larger, multi-centre samples with follow-up periods of at least 12 months. Psychoeducation should be integrated into routine psychiatric services and delivered in culturally adapted formats, and caregiver support interventions should be complemented by patient-focused psychosocial rehabilitation for sustained outcomes.

References

[1] M. S. Ezeme, R. Uwakwe, A. C. Ndukuba, M. N. Igwe, P. C. Odinka, K. Amadi, *et al.*, "Socio-demographic correlates of treatment response among patients with schizophrenia in a tertiary hospital in South-East Nigeria," *Afr. Health Sci.*, vol. 16, no. 4, pp. 1036–1044, Dec. 2016.

[2] P. Ganguly, A. Soliman, and A. A. Moustafa, "Holistic management of schizophrenia symptoms using pharmacological and non-pharmacological treatment," *Front. Public Health*, vol. 6, Art. no. 166, Jun. 2018.

[3] K. R. Patel, J. Cherian, K. Gohil, and D. Atkinson, "Schizophrenia: Overview and treatment options," *P T*, vol. 39, no. 9, pp. 638–645, Sep. 2014.

[4] V. Dionisie, M. C. Manea, M. Mirela, L. S. Bonciu, S. Riga, and M. G. Puiu, "The relationship between quality of life and functionality in patients with schizophrenia – A preliminary report," *J. Mind Med. Sci.*, vol. 10, no. 1, pp. 106–112, Apr. 2023.

[5] O. Gureje, O. Olowosegun, K. Adebayo, and D. J. Stein, "The prevalence and profile of non-affective psychosis in the Nigerian Survey of Mental Health and Wellbeing," *World Psychiatry*, vol. 9, no. 1, pp. 50–55, Feb. 2010.

[6] Z. Yuan, C. Bai, Y. Li, J. Zhang, P. Yu, and F. Jiang, "Global burden and prediction study of schizophrenia 1990–2030: Comparison with China," *BMC Psychiatry*, vol. 25, no. 1, Art. no. 955, Oct. 2025.

[7] S. Moges, T. Belete, T. Mekonen, and M. Menberu, "Lifetime relapse and its associated factors among people with schizophrenia spectrum disorders who are on follow up at Comprehensive Specialized Hospitals in Amhara region, Ethiopia: A cross-sectional study," *Int. J. Ment. Health Syst.*, vol. 15, no. 1, Art. no. 42, 2021.

[8] R. L. Butzlaff and J. M. Hooley, "Expressed emotion and psychiatric relapse: A meta-analysis," *Arch. Gen. Psychiatry*, vol. 55, no. 6, pp. 547–552, Jun. 1998.

[9] C. F. Ma, S. K. W. Chan, Y. L. Chung, S. M. Ng, C. L. M. Hui, Y. N. Suen, *et al.*, "The predictive power of expressed emotion and its components in relapse of schizophrenia: A meta-analysis and meta-regression," *Psychol. Med.*, vol. 51, no. 3, pp. 365–375, Feb. 2021.

[10] C. Ewhrudjakpor, "Case studies of family expressed emotion for persons living with schizophrenia in Delta State of Nigeria," *Eur. J. Ment. Health*, vol. 4, no. 2, pp. 247–256, Dec. 2009.

[11] F. Babandi, U. M. Usman, Z. G. Habib, D. S. Owolabi, M. I. Gudaji, A. A. Taura, C. N. Aghukwa, A. S. Baguda, and A. S. Salihu, "Caregiver expressed emotion, quality of life and medication adherence among people living with schizophrenia in Nigeria," *J. Biomed. Res. Environ. Sci.*, vol. 3, no. 5, pp. 627–633, May 2022.

[12] L. Asmal, S. Mall, R. Emsley, B. Chiliza, and L. Swartz, "Towards a treatment model for family therapy for schizophrenia in an urban African setting: Results from a qualitative study," *Int. J. Soc. Psychiatry*, vol. 60, no. 4, pp. 315–320, Jun. 2014.

[13] K. Shetty, S. Math, P. Marimuthu, and V. Rawat, "Family intervention for expressed emotion in schizophrenia: Indian context," *Indian J. Psychiatry*, vol. 65, no. 4, p. 453, Apr. 2023.

[14] S. Yohanes, M. Mubarak, D. Kebede, K. Mahder, N. Misrak, A. Yayeh, *et al.*, "Expressed emotion and associated factors among care givers of schizophrenia patient attending mental health service in Dilla University Refferal Hospital, Dilla, Southern Ethiopia," *Research Square*, Tech. Rep., 2022.

[15] R. E. Ogbolu, J. D. Adeyemi, and A. R. Erinfolami, "Expressed emotion among schizophrenic patients in Lagos, Nigeria: A pilot study," *Afr. J. Psychiatry*, vol. 16, no. 5, pp. 329–331, Sep. 2013.

[16] B. Yimam, M. Soboka, Y. Getachew, B. Alemu, G. Ahmed, E. Tesfaye, *et al.*, "Expressed emotion of caregivers among schizophrenic patients visiting Jimma University Medical Center Psychiatry Outpatient Unit, Southwest Ethiopia," *Ann. Gen. Psychiatry*, vol. 21, no. 1, Art. no. 44, Nov. 2022.

[17] A. C. Amaresha and G. Venkatasubramanian, "Expressed emotion in schizophrenia: An overview," *Indian J. Psychol. Med.*, vol. 34, no. 1, pp. 12–20, Jan. 2012.

[18] A. Aguilera, S. R. López, N. J. K. Breitborde, A. Kopelowicz, and R. Zarate, "Expressed emotion and sociocultural moderation in the course of schizophrenia," *J. Abnorm. Psychol.*, vol. 119, no. 4, pp. 875–885, Nov. 2010.

[19] A. Ramanathan, S. K. Miah, L. Nagularaj, H. S. Sharif, and M. Shaikh, "Perceived expressed emotion in individuals with a first episode of psychosis from a South Asian background," *Early Interv. Psychiatry*, vol. 18, no. 12, pp. 991–1000, Dec. 2024.

[20] R. Kochumon, M. Sanil, T. Saleem, and H. M. Tharayil, "Effect of psychoeducation on expressed emotion among caregivers of patients with mental disorders," *Indian J. Priv. Psychiatry*, vol. 18, no. 2, pp. 57–60, Jul.–Dec. 2024.

[21] B. Kumari, A. Ali, and F. A. Paul, "Family psychoeducation and supportive casework intervention on expressed emotion and care burden among caregivers of individuals with schizophrenia," *Odisha J. Psychiatry*, vol. 20, no. 1, pp. 30–33, Jan.–Jun. 2024.

[22] E. Öksüz, S. Karaca, G. Özaltın, and M. A. Ateş, "The effects of psychoeducation on the expressed emotion and family functioning of the family members in first-episode schizophrenia," *Community Ment. Health J.*, vol. 53, no. 4, pp. 464–473, May 2017.

[23] B. Ozkan, E. Erdem, S. D. Ozsoy, and G. Zararsiz, "Effect of psychoeducation and telepsychiatric follow up given to the caregiver of the schizophrenic patient on family burden, depression and expression of emotion," *Pak. J. Med. Sci.*, vol. 29, no. 5, pp. 1122–1127, Sep.–Oct. 2013.

[24] B. Suresh Batra, A. Milind Saoji, S. Batra, and D. Suresh Batra, "Effect of family psycho education on Knowledge, Quality of Life, Expressed Emotions, Burden of Disease and coping among caregivers of patients with schizophrenia," *IOSR J. Dent. Med. Sci.*, vol. 17, no. 5, pp. 59–73, May 2018.

[25] G. Pitschel-Walz, S. Leucht, J. Bäuml, W. Kissling, and R. R. Engel, "The effect of family interventions on relapse and rehospitalization in schizophrenia - A meta-analysis," *Schizophr. Bull.*, vol. 27, no. 1, pp. 73–92, Jan. 2001.

[26] M. S. Ran, M. Z. Xiang, C. L. W. Chan, J. Leff, P. Simpson, M. S. Huang, *et al.*, "Effectiveness of psychoeducational intervention for rural Chinese families experiencing schizophrenia - A randomised controlled trial," *Soc. Psychiatry Psychiatr. Epidemiol.*, vol. 38, no. 2, pp. 69–75, Feb. 2003.

[27] F. Pharoah, J. J. Mari, J. Rathbone, and W. Wong, "Family intervention for schizophrenia," *Cochrane Database Syst. Rev.*, vol. 2010, no. 12, Art. no. CD000088, Dec. 2010.