Exploring outside-in empowerment approach to improve the family's ability to manage schizophrenia disorder

Wahyu Endang Setyowati,[1,2] Nursalam,[3] Hanik Endang Nihayati,[3] Dwi Indah Iswanti,[4] Nia Agustiningsih,[5] Intan Rismatul Azizah[2,6]

[1]Doctoral Program in Nursing, Universitas Airlangga, Surabaya; [2]Faculty of Nursing, Universitas Islam Sultan Agung, Semarang; [3]Department of Nursing, Faculty of Nursing, Universitas Airlangga, Surabaya; [4]Department of Nursing, Faculty of Nursing and Health Science, Universitas Karya Husada Semarang, Semarang; [5]Nursing Department, Sekolah Tinggi Ilmu Kesehatan Kepanjen, Malang; [6]Master of Nursing Program, Faculty of Nursing, Universitas Airlangga, Surabaya, Indonesia

Correspondence: Wahyu Endang Setyowati, Doctoral Program, Faculty of Nursing, Universitas Airlangga, Surabaya, 60115, Indonesia.
E-mail: wahyu.endang@unissula.ac.id

Key words: caregiving; family's capability; outside-in empowerment; schizophrenia.

Ethics approval and consent to participate: this study received ethical clearance from the Health Research Ethics Committee of the Faculty of Nursing, Universitas Airlangga (Number 2637-KEPK), and from the Ethics Committee of Dr. Amino Gondohutomo Psychiatric Hospital, Central Java Province (Number 420/12375), and has obtained the respondents' consent through informed consent, anonymity, confidentiality, fidelity, and autonomy.

Availability of data and materials: all data generated or analyzed during this study are included in this published article.

Patient consent for publication: written informed consent was obtained for anonymized patient information to be published.

Conflict of interest: the authors declare no conflict of interest.

Funding: this research did not receive external funding.

Contributions: WES, conceptualization, data curation, formal analysis, methodology, validation, visualization, writing – original draft, review & editing; N, conceptualization, investigation, methodology, validation, and writing – original draft, review & editing; HEN, conceptualization, methodology, formal analysis, validation, and writing – original draft, review & editing. DII, conceptualization, methodology, formal analysis, validation, and writing – original draft, review & editing. NA, conceptualization, methodology, formal analysis, validation, and writing – original draft, review & editing. IRA, conceptualization, methodology, formal analysis, validation, and writing – original draft, review & editing.

Acknowledgement: the authors would like to express their gratitude to the families who participated as respondents and the nurses at the Outpatient Clinic of Dr. Amino Gondohutomo Psychiatric Hospital, Central Java Province. This research is part of a doctoral dissertation, and the insights gained have significantly contributed to the completion of this academic work.

Received: 2 September 2024.
Accepted: 24 October 2024.
Early view: 6 December 2024.

Healthcare in Low-resource Settings 2025; 13(s1):13000
doi:10.4081/hls.2024.13000

Abstract

Families often encounter a sense of despair and exhibit diminished capability when providing care for schizophrenia patients, predominantly due to restricted knowledge and lack of formal training and support. Existing strategies to empower families have been insufficient in effectively dealing with schizophrenia care. This study objective was to explore the relationship between family knowledge, coping skills, and interaction within the framework of outside-in empowerment and their ability to care for individuals with schizophrenia. This explanatory research utilizes a cross-sectional design and involves a sample of 135 families, acting as caregivers for schizophrenia patients, selected through purposive sampling based on inclusion criteria. Regarding outside-in empowerment, knowledge is evaluated using a questionnaire developed from the concept of schizophrenia care, coping skills are measured using the Family Coping Questionnaire (FCQ), and family interaction is assessed through the Brief Family Relationship Scale (BFRS). The family's ability to manage schizophrenia is gauged using the Barthel Index and the Caregiving Tasks in Caring for an Adult with Mental Illness Scale (CTiCAMIS). All of the questionnaire has been tested for validity and reliability.The data analysis involves multiple linear regression at a 95% significance level.

The study reveals that knowledge (p=0.018 <0.005), coping skills (p=0.004 <0.005), and family interaction as part of outside-in empowerment significantly correlate with the family's ability to manage schizophrenia (p=0.001 <0.005). Notably, the ability for family interaction (ß=0.392) is a predictor of the family's capability to care for schizophrenia patients (p=0.042 <0.05). Enhancing family interactions is crucial to empower families in managing schizophrenia patients. This enhancement can be facilitated by fostering cohesion, minimizing conflicts, and effectively managing the caregiving burden associated with schizophrenia.

Introduction

Families frequently experience feelings of inadequacy, failure, helplessness, fatigue, and uncertainty when caring for individuals diagnosed with schizophrenia.[1] This often results in a challenging home environment, limiting the quality of care patients receive.[2] Numerous studies report a generally low capacity among families to provide adequate schizophrenia care, compounded by a lack of accessible information and support specifically designed for families.[3,4] Schizophrenia remains a global health concern with 21 million reported cases, equating to 0.24 cases per 1000 population.[5] In Indonesia, the prevalence of schizophrenia escalated from 1.3 to 7 cases per 1000 population in 2018.[6] In Central Java, the prevalence rose from 2.3% (2013) to 9% (2018)[7] with Semarang City

witnessing the highest incidence rate among other cities, at 0.79 per 1000 population in 2018.[8] This surge in schizophrenia cases is attributable to various factors, including the family's inability to provide care for schizophrenia patients during relapse symptoms and their lack of active involvement in home care.[9]

A primary issue contributing to this gap is families' sense of helplessness and limited empowerment regarding their roles in schizophrenia management. Key barriers include inadequate family-centered empowerment initiatives, insufficient education on preventive strategies,[3,4] weak family function enhancement programs, and lack of ongoing family support systems, Moreover, families often face difficulties in recognizing early disease symptoms, lack collaboration with service providers,[3,4] and there is a paucity of interventions focusing on caregiver or family welfare.[10]

Although psychiatric nurses in hospitals and community health centers have initiated mental health promotion, these efforts often fall short due to insufficient family involvement and empowerment. Current practices focus more on responding to individual cases than on enabling families to maintain long-term, effective management strategies.[11] Therefore, this study objective was to examine the relationship between family empowerment—specifically knowledge, coping skills, and family interactions—and families' abilities to manage schizophrenia, offering insights into how outside-in empowerment could improve family-centered care and long-term patient outcomes.

Materials and Methods

Study design

This study utilizes an explanatory design with a cross-sectional approach. It investigates the relationship between the outside-in empowerment (which includes knowledge, coping skills, and family interaction) , and family interaction and the family's ability to care for schizophrenia patients at a single point in time. This care includes fulfilling Activities of Daily Living (ADL), facilitating social interaction, and fostering productive skills.

Participants

The study focuses on the entire population of families with schizophrenia patients who have received treatment and are currently under outpatient monitoring at Dr. Amino Gondohutomo Psychiatric Hospital in Central Java Province, specifically those residing in Semarang City. The population size in 2022 is approximately 1,911. Following the rule of thumb, the sample size was determined to be 135 families. These samples were chosen using purposive sampling based on several inclusion criteria: core family members cohabitating with the patient, providing daily home care for schizophrenia patients, possessing at least 1 year of experience in caring for schizophrenia patients, being aged between 20-60 years, and having a family member with schizophrenia who has received treatment more than three times and is under monitoring at Dr. Amino Gondohutomo Psychiatric Hospital in Central Java Province.

Data collections

Data collection took place at Dr. Amino Gondohutomo Psychiatric Hospital's Psychogeriatric and Adult Polyclinic in Central Java Province, from September 20th to October 3rd, 2022. A checklist was used to gather respondent demographic characteristics. The research variables of Outside-in empowerment, which include knowledge, coping skills, and family interaction, as well as the family's ability to care for schizophrenia, were evaluated using questionnaires.

The knowledge questionnaire, derived from the concept of schizophrenia care,[12,13] encompasses: disease process, signs and symptoms, triggering and supporting factors, care methods, and relapse prevention, with a total of 7 questions. Scores were assigned based on the number of marked answers, with each mark scoring 1, and so forth, resulting in a total score range of 7-28. The Coping Skills questionnaire employed the Family Coping Questionnaire (FCQ) by (14). The FCQ is a 9-statement scale scored from 1 (never) to 4 (always), with a score range of 9-36. It consists of seven subscales: information, positive communication, social interest, coercion, avoidance, resignation, and patient's social involvement. The Brief Family Relationship Scale (BFRS), adopted from,[15] was used for the family interaction questionnaire. This scale measures the relationship between caregivers and family members with schizophrenia. The BFRS consists of three subscales: cohesion, expressiveness, and conflict. It includes 10 statements measured with a 4-point Likert scale (1=never to 4=always) and a score range of 10-40.

Social interaction support was measured using 5 items adapted from the Caregiving Tasks in Caring for an Adult with Mental Illness Scale (CTiCAMIS), with scores ranging from 5 to 20. Finally, a questionnaire on supporting productive skills, developed by the researcher based on theoretical concepts,[16] included 3 items, with scores ranging from 3 to 12.

All instruments were validated and tested for reliability with a sample of 30 respondents. The description of outside-in empowerment and family interaction questionnaire presented in Table 1. The knowledge component included aspects such as disease process, symptoms, triggers/supports, care methods, and relapse prevention, with a validity range of 0.503–0.934 and a Cronbach's alpha of 0.882. Coping skills were measured across various domains (information, positive communication, social interest, coercion, avoidance, resignation, and patient social involvement) with validity scores of 0.419–0.895 and reliability at 0.929. Family interaction, covering cohesion, expressiveness, and conflict, showed validity scores from 0.429 to 0.915 and reliability of 0.929. The family's caregiving ability was evaluated through fulfilling ADL needs (validity 0.472–0.824; reliability 0.912), assisting with social interaction (validity 0.448–0.648; reliability 0.777), and aiding in productive skills (validity 0.618–0.771; reliability 0.861). All variables exceeded the r-table threshold of 0.361, indicating robust instrument construction.

Data analysis

A descriptive analysis was performed on the demographic characteristics of respondents, sub-variables of outside-in empowerment, such as knowledge, coping skills, and family interaction, and the variable of the family's ability to manage schizophrenia patients. These are represented as percentages based on the findings from each research variable. An inferential analysis in the form of a Pearson correlation with a 95% significance level was applied to analyze the relationship between knowledge, coping skills, and family interaction variables with the family's ability to manage schizophrenia patients. The outcomes of this bivariate relationship analysis were used as a basis for testing the four variables multivariately using multiple regression with an alpha level of 5% (0.05).

Ethical consideration

This study received ethical clearance from the Health Research Ethics Committee of the Faculty of Nursing, Universitas Airlangga

(Number 2637-KEPK), and from the Ethics Committee of Dr. Amino Gondohutomo Psychiatric Hospital, Central Java Province (Number 420/12375).

Results

Based on Table 2, the demographic characteristics of families caring for schizophrenia patients are predominantly male (50.4%), middle-aged (51.1%), with high school/vocational school education (38.5%), working as private employees (37.8%), and earning less than the Semarang City Minimum Wage (65.9%). Siblings constitute the most common caregiver relationship (39.3%). Occupation and income are the characteristics most closely related to the family's ability to care for schizophrenia (p=0.002 <0.005).

Table 3 demonstrates that the majority of families are moderately able to meet the ADL needs (37.0%) of schizophrenia patients but still struggle in assisting with social interaction (53.3%) and productive skills (48.9%).

Table 4 illustrates that a significant number of families still lack knowledge about caring for schizophrenia patients, with defi-

Table 1. Questionnaire research variables.

Variable	Indicator	Favorable	Unfavorable	Validity (r-table =0.361)	Reliability (Cronbach alpha)
Outside-in empowerment					
Knowledge	Disease process	1		0.503-0.934	0.882
	Signs and symptoms	2			
	Triggers and supports	3			
	Care methods	4-6			
	Preventing relapse		7		
Coping skills	Information	8		0.419-0.895	0.929
	Positive communication	9			
	Social interest	10			
	Coercion		11-12		
	Avoidance		13-14		
	Resignation		15		
	Patient's social involvement	17			
Family interaction	Cohesion	18-21		0.429-0.915	0.929
	Expressive	22,23			
	Conflict		24-27		
Family's ability to care for schizophrenia					
Fulfilling ADL needs	1-10		0.472-0.824	0.912	
Assisting with social interaction	11-15		0.448-0.648	0.777	
Aiding in productive skills	16-18		0.618-0.771	0.861	

Table 2. Description of the demographic characteristics of families caring for schizophrenia patients (n=135).

Family characteristics	Indicator	f	%	p
Gender	Man	68	50.4	0.507
	Woman	67	49.6	
Age	Early Adulthood (20-30 years)	20	14.8	0.022
	Middle Adult (31-55 years)	69	51.1	
	Pre-Elderly (55-60 years)	46	34.1	
Education	Not completed in primary school	1	7.7	0.913
	Elementary school	28	20.7	
	Junior high school	29	21.5	
	Senior High School	52	38.5	
	College	25	18.5	
Employment	Government employees	6	4.4	0.002
	Pension	9	6.7	
	Self-employed	24	17.8	
	Private sector employee	51	37.8	
	Housewife	31	23.0	
	laborer	9	6.7	
	Unemployed	5	3.7	
Family outcome	< Regional minimum wage	89	65.9	0.002
	= Regional minimum wage	14	10.4	
	> Regional minimum wage	32	23.7	

ciencies in understanding the disease process (34.8%), recognizing signs and symptoms of the disease (53.3%), identifying triggering/supporting factors (57.0%), and implementing patient care methods (52.6%). The coping skills of families caring for schizophrenia patients are partially maladaptive, with 34.8% demonstrating low social involvement. On the other hand, family interaction in caring for schizophrenia patients is generally adequate in establishing cohesion (69.6%), expressing skills (54.8%), and resol-

Table 3. Description of family's ability to care for schizophrenia patients (n=135).

Indicator	Category scale	f	(%)
Fulfilling ADL needs	Less	48	35.6
	Enough	50	37.0
	Good	37	27.4
Assisting with social interaction	Less	72	53.3
	Enough	47	34.8
	Good	16	11.9
Aiding in productive skills	Less	66	48.9
	Enough	38	28.1
	Good	31	23.0
Mean		SD	
91.78		26.064	

Table 4. Relationship between Knowledge, Coping Skills, and Family Interaction in Outside-in Empowerment with the Family's Ability to Care for Schizophrenia (n=135).

Variable	Indicator	Category scale	f	%	Mean (Standard Deviation)	p
Knowledge	Disease process	Less	47	34.8	28.41 (12.802)	0.018
		Enough	45	33.3		
		Good	43	31.9		
	Signs and symptoms	Less	72	53.3		
		Enough	46	34.1		
		Good	17	12.6		
	Triggers and supports	Less	77	57.0		
		Enough	40	29.0		
		Good	18	13.3		
	Care methods	Less	71	52.6		
		Enough	28	20.7		
		Good	36	26.7		
	Preventing relapse	Less	42	3.1		
		Enough	47	34.8		
		Good	46	34.1		
Coping skills	Information	Maladaptive	58	43.0	46.59 (7.576)	0.004
		Adaptive	77	57.0		
	Positive communication	Maladaptive	57	42.2		
		Adaptive	78	57.8		
	Social interest	Maladaptive	22	16.3		
		Adaptive	113	83.7		
	Coercion	Maladaptive	34	25.2		
		Adaptive	101	74.8		
	Avoidance	Maladaptive	21	15.6		
		Adaptive	114	84.4		
	Resignation	Maladaptive	25	18.5		
		Adaptive	110	81.5		
	Patient's social involvement	Maladaptive	47	34.8		
		Adaptive	88	65.2		
Family interaction	Cohesion	Less	7	5.2	59.67 (9.564)	0.001
		Enough	94	69.6		
		Good	34	25.2		
	Expressive	Less	13	9.6		
		Enough	74		54.8	
		Good	48		35.6	
	Conflict	Less	14		10.4	
		Enough	89		65.9	
		Good	32		23.7	

ving conflicts (65.9%). Pearson correlation test results indicate that knowledge (p=0.018 <0.005), coping skills (p=0.004 <0.005), and family interaction are significantly related to the family's ability to care for schizophrenia (p=0.001 <0.005).

The multiple regression test results in Table 5, based on the variables of knowledge, coping skills, and family interaction in Outside-in Empowerment with the Family's Ability to Care for Schizophrenia, indicate that family interaction (ß=0.392) is a significant predictor of the family's ability to care for schizophrenia patients (p=0.042 <0.05).

Discussion

Age, occupation, and income are demographic characteristics of the family that correlate with the family's ability to care for schizophrenia patients. Middle-aged families are likely more capable of assimilating information and knowledge regarding patient care. Furthermore, these families are psychologically mature, enabling them to effectively utilize coping skills, and they possess the necessary energy to care for schizophrenia patients. This is corroborated which shows that the age of the caregiver or family influences the burden of care and duration of care. Employment status also defines the socio-economic resources that a family has at its disposal for patient care. This is corroborated showed that work influences the burden on families in caring for schizophrenic patients.[16] This is supported which shows that income is a predictor of care burden, the family's income serves as a financial resource, underpinning the care and treatment needs of schizophrenia patients.[17]

The majority of families exhibit a lack of knowledge about caring for schizophrenia patients, particularly in understanding the disease process, recognizing signs and symptoms, identifying triggering/supporting factors, and implementing patient care methods. Several studies suggest that families perceive the information on caring for schizophrenia as inadequate,[3,4] and they lack sufficient formal training or support in patient care.[18] Families require ongoing mental health education from mental health personnel that can reach peripheral communities. This mental health education should target not only families but also the surrounding community that forms the family's support system. Employing suitable methods, aligned with education and involving local community leaders, is believed to enhance the family's knowledge to care for and prevent relapse in schizophrenia patients.

Family coping skills related to caregiving issues are somewhat maladaptive, especially concerning social involvement. This is substantiated by a study[19] indicating that families primarily caring for schizophrenia patients tend to adopt maladaptive coping strategies, including avoidance, coercion, and withdrawal. These maladaptive coping skills might result from insufficient utilization of social support from the community, limitations within the family in accessing patient care information, challenges in communicating with schizophrenia patients, and a continued reliance on forceful or authoritarian decision-making in patient care. Enhancing family coping resources can serve as a guide in implementing a family-centered care program aimed at reducing the burden of caring for schizophrenia patients through efficient family support.[20] Mental health professionals should consider the family's needs and challenges in caring for schizophrenia patients, planning supportive resources for both families and patients across clinical and community settings. Families are encouraged to adopt constructive coping strategies when caring for schizophrenia patients.

Research findings suggest that family interaction remains in the moderate category regarding expression ability, cohesion, and conflict resolution. This could be attributed to the family's hesitance to discuss their struggles in caring for schizophrenia patients with other family members. Moreover, time constraints due to busy work schedules of each family member could also play a role. Inappropriate family involvement can render recovery-oriented services ineffective in facilitating the recovery of schizophrenia patients.[21] The strength of cohesion and relationships among family members is crucial for ensuring effective care for schizophrenia patients. Collective activities within the family can enable them to share caregiving responsibilities, seek solutions, and distribute caregiving tasks for schizophrenia patients.

There exists a significant correlation between knowledge, coping skills, and family interaction in outside-in empowerment and the family's ability to care for schizophrenia patients. This is substantiated by the fact that psychoeducation groups receiving outside-in empowerment exhibit a considerable enhancement in family relationships, caregiving burden, and coping skills.[10] The result of outside-in empowerment is the amplification of caregiving knowledge, coping skills, and the bolstering of family interaction via psychoeducation. Families are trained on patient care, ranging from meeting Activities of Daily Living (ADL), aiding with social interaction, to building productive skills. Addressing the caregiving burden through adaptive coping mechanisms and enhancing family interaction, considered as a critical resource for caring for schizophrenia patients,[22] can have a positive impact on the family's ability to care for schizophrenia patients at home.

Family interaction is the most influential factor affecting the family's ability to care for schizophrenia. The strength of cohesion and interaction among family members is crucial in supporting the care for schizophrenia patients. Research findings[23] indicate that strengthening family bonds, cultivating life insights, and promoting social mobility will positively influence the experience of caring for schizophrenia patients. The existence of shared activities within the family allows them to distribute the caregiving burden, seek solutions, and allocate caregiving tasks for schizophrenia patients. It can be concluded that the overall competence in outside-in empowerment, particularly family interaction, can enhance the ability to care for schizophrenia patients.

Table 5. Factors influencing the family's ability to care for schizophrenia.

Factor	B	Standard Error	Beta	t	Sig.
(Constant)	41.333	14.700		2.812	0.006
Knowledge	0.148	0.177	0.079	0.836	0.405
Coping skills	0.374	0.315	0.118	1.188	0.237
Family interaction	0.483	0.246	0.392	2.019	0.042

Implications

This study highlights the critical role of outside-in empowerment, specifically family knowledge, coping skills, and interaction in enhancing the caregiving capacity of families for individuals with schizophrenia. The findings underscore the need for structured mental health education programs targeted at families, enabling them to acquire essential knowledge about schizophrenia care and adaptive coping strategies. Community-based mental health initiatives, led by trained mental health professionals, could play a significant role in disseminating relevant information and providing support. Additionally, interventions aimed at strengthening family interactions, such as psychoeducation and family-centered therapies, could foster a collaborative environment where caregiving responsibilities are more evenly distributed, reducing the burden on individual family members. These insights can inform policymakers and healthcare providers in designing holistic, family-centered mental health programs to improve long-term outcomes for schizophrenia patients.

Limitations

This study has several limitations. First, the cross-sectional design limits the ability to draw causal conclusions regarding the relationship between outside-in empowerment variables and caregiving capacity. Longitudinal studies would be beneficial to observe changes in family caregiving ability over time. Additionally, the study was conducted in a single public psychiatric hospital in Central Java, which may limit the generalizability of the findings to other regions or settings. Finally, reliance on self-reported data could introduce response bias, as participants may have given socially desirable answers. Future studies should consider incorporating objective assessments and expanding the sample to include multiple centers or community settings to enhance generalizability.

Conclusions

This study reveals that demographic factors, such as age, employment, and income, play a significant role in influencing a family's ability to care for individuals with schizophrenia. Moreover, outside-in empowerment, encompassing knowledge, coping skills, and family interaction, is strongly associated with caregiving capacity. Among these factors, family interaction emerged as the most critical determinant, highlighting the importance of cohesive family relationships in effective schizophrenia care. These findings suggest that targeted interventions, such as psychoeducation and family-centered support programs, can strengthen family resources and adaptive coping mechanisms, ultimately enhancing the quality of care for schizophrenia patients. By addressing the caregiving burden through education, empowerment, and community support, healthcare providers can facilitate more effective family-centered care, promoting improved outcomes for both patients and their families.

References

1. Suhardiningsih AVS, Sustrami D, Mundakir M. Parenting style, family support, and relapse among schizophrenia patients: a literature review. Healthc Low-Resource Settings 2024;12:11820.
2. Kusumawardani W, Yusuf A, Fitryasari R, et al. Family burden effect on the ability in taking care of schizophrenia patient. Indian J Public Heal Res Dev 2019;10:2654–9.
3. Mohr P, Galderisi S, Boyer P, et al. Value of schizophrenia treatment I: The patient journey. Eur Psychiatry 2018;53:107–15.
4. Bai XL, Luo ZC, Wang A, et al. Challenge of parents caring for children or adolescents with early-stage schizophrenia in China: A qualitative study. Perspect Psychiatr Care 2020;56:777–84.
5. Benjamin James Sadock VAS& PR. Kaplan and Sadock's Comprehensive Textbook of Psychiatry. 10th ed. Wolters Kluwer; 2017.
6. Ministry of Health of the Republic of Indonesia. Main Results Basic Health Research. Minist Heal Repub Indones. 2018;1–582.
7. Ministry of Health of the Republic of Indonesia. Main Result of Basic Heatlh Research. Riskesdas 2018;52.
8. Agency of Health Research and Development. Report of Central Java Province in Basic Health Research 2018. Ministry of Health of the Republic of Indonesia, 2018; 88–94 p.
9. Kandar. Gambaran Karakteristik Pasien Gangguan Jiwa yang Mengalami Rawat Inap Ulang. J Ilm Permas J Ilm STIKES Kendal 2017;7:11–5.
10. Zhou DHR, Chiu YLM, Lo TLW, et al. Outside-in or inside-out? A randomized controlled trial of two empowerment approaches for family caregivers of people with schizophrenia. Issues Ment Health Nurs 2020;41:761–72.
11. Van Es CM, Mooren T, Zwaanswijk M, et al. Family Empowerment (FAME): Study protocol for a pilot implementation and evaluation of a preventive multi-family programme for asylum-seeker families. Pilot Feasibility Stud 2019;5:1–10.
12. Budi Anna Keliat dkk. Psychiatric Nursing. Jakarta: EGC; 2020. 209–217 p.
13. Ahmad I, Khalily MT, Hallahan B, Shah I. Factors associated with psychotic relapse in patients with schizophrenia in a Pakistani cohort. Int J Ment Health Nurs 2017;26:384–90.
14. Magliano L, Guarneri M, Marasco C, et al. A new questionnaire assessing coping strategies in relatives of patients with schizophrenia: Development and factor analysis. Acta Psychiatr Scand 1996;94:224–8.
15. Fok CCT, Allen J, Henry D, Team PA. The brief family relationship scale: a brief measure of the relationship dimension in family functioning. Assessment 2014;21:67–72.
16. Nayak MR, Mallik T, Hembram S, Dash M. Perceived family burden among the male & female caregivers of schizophrenia patients- a comparative study in Eastern India. Int J Res Rev 2020;7:1.
17. Rahmani F, Roshangar F, Gholizadeh L, Asghari E. Caregiver burden and the associated factors in the family caregivers of patients with schizophrenia. Nurs Open 2022;9:1995–2002.
18. Ashcroft K, Kim E, Elefant E, et al. Meta-analysis of caregiver-directed psychosocial interventions for schizophrenia. Community Ment Health J 2018;54:983–91.
19. Rahmani F, Ranjbar F, Hosseinzadeh M, et al. Coping strategies of family caregivers of patients with schizophrenia in Iran: A cross-sectional survey. Int J Nurs Sci 2019;6:148–53.
20. Kazemian S, Zarei N, Esmaeily M. Effect of strengthening family coping resources on emotion regulation of family caregivers of patients with schizophrenia. Evid Based Care J 2020;10:7–17.
21. Yu BCL, Mak WWS, Chio FHN. Family involvement moderates the relationship between perceived recovery orientation of services and personal narratives among Chinese with schizo-

phrenia in Hong Kong: a 1-year longitudinal investigation. Soc Psychiatry Psychiatr Epidemiol 2021;56:401–8.
22. Indah Iswanti D, Nursalam N, Fitryasari R, Kusuma Dewi R. Development of an integrative empowerment model to care for patients with schizophrenia disorder. J Public Health Res 2023;12.
23. Darban F, Mehdipour- Rabori R, Farokhzadian J, Nouhi E, Sabzevari S. Family achievements in struggling with schizophrenia: life experiences in a qualitative content analysis study in Iran. BMC Psychiatry 2021;21:1–12.