Indonesian Journal of Global Health Research
Volume 7 Number 1, February 2025
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

THE IMPACT OF FAMILY PSYCHOEDUCATION ON MEDICATION ADHERENCE IN SCHIZOPHRENIA CLIENTS FOR PREVENTING REHOSPITALIZATION

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ABSTRACT
Schizophrenia is a serious mental illness that can significantly impact the quality of life. Families play a crucial role as primary caregivers, providing both physical and mental support to individuals with schizophrenia. Family psychoeducation therapy is a structured intervention designed to address relapse-related challenges in schizophrenia clients. The purpose of this study was to examine the impact of family psychoeducation interventions on medication adherence in schizophrenia clients. This study used a quasi-experimental design with 62 families divided randomly into intervention and control groups (31 each). Families with a member diagnosed with schizophrenia and willing to participate were included. The intervention group received four weekly psychoeducation sessions, while the control group received standard care. Medication adherence was measured using a validated scale. Data were analyzed with the Mann-Whitney U test ($p < 0.05$) to assess the intervention's impact. The study found no significant effect of psychoeducation on medication adherence based on age ($p = 0.968$), gender ($p = 0.172$), and education level ($p = 0.148$). However, there was a significant effect of psychoeducation on medication adherence related to employment ($p = 0.023$), knowledge ($p = 0.023$), attitudes ($p = 0.001$), and overall adherence ($p = 0.001$). The family psychoeducation intervention program showed significant benefits, including improved medication adherence, better family perceptions of medication, enhanced understanding of schizophrenia, and reduced relapse rates and hospital readmissions.

Keywords: family psychoeducation; medication adherence; rehospitalization; schizophrenia

How to cite (in APA style)
Mamang, A., Winahyu, N. E., Kahiriyah, O. H., Musadad, D. A., & Rustika, R. (2025). The Impact of Family Psychoeducation on Medication Adherence in Schizophrenia Clients for Preventing Rehospitalization. Indonesian Journal of Global Health Research, 7(1), 1117-1126. https://doi.org/10.37287/ijghr.v7i1.5507.

INTRODUCTION

Schizophrenia is a mental illness characterized by severe mental disorders such as hallucinations and delusions that can affect a person's thoughts, feelings, and behavior, as well as loss of understanding of reality and loss of self-awareness (Yudhantara, Surya and Ratri, 2018) . Schizophrenia is a type of serious mental illness or disorder or a long-lasting mental disorder that can affect the quality of human life. Those who suffer from schizophrenia experience hallucinations, illogical thoughts, delusions that cause aggressive behavior, and often scream hysterically. Although the symptoms of schizophrenia can vary from person to person, people with schizophrenia usually do not act like normal people (Kusumawardani, 2022) .

Data from the World Health Organization shows that one billion people have mental disorders worldwide, accounting for 10% of all diseases. Nearly 1 in 300 people, or 0.32% of the global population, have mental disorders, including 24 million cases of schizophrenia (WHO, 2022) . Meanwhile, based on the results of the 2018 Riskesdas, the prevalence of schizophrenia or psychosis in Indonesia is 6.7% with a distribution area in urban areas of 6.4% and rural areas of 7.0%, while the coverage of treatment for schizophrenia is 85.0% (Ministry of Health, 2019). Schizophrenia is often associated with various social, personal, family, educational, work, and other important aspects of human life. After leaving the hospital, not all individuals

with schizophrenia receive optimal care. Only about 31.3% of people with psychosis or schizophrenia receive adequate mental health care (WHO, 2022). It is estimated that more than 90% of people with schizophrenia experience hallucinations in various forms, with the most common auditory hallucinations, in the form of recognizable voices, either single or multiple voices, which are often considered to reflect the individual's behavior (Yosep, 2016).

From the findings at Soeharto Heerdjan Hospital (RSSH from 2022 to 2023, it was found that clients with schizophrenia after being treated in the hospital within 7-14 days returned home, the client was readmitted to the hospital, the client's family thought it was better so that they did not need treatment, because the family was afraid that if they took medication they would become dependent and the family was embarrassed if their family members suffered from mental health disorders. Obstacles in the treatment of schizophrenia sufferers are not receiving treatment according to the schedule determined by the client. So that the client experiences a relapse. This can occur due to non-compliance with the use of medication and routine checks, as well as lack of support from family and the community. Patients who have completed hospital treatment must be monitored to prevent relapse. This will definitely have an impact on clients, their families, and the community around them. In 2022, 767 new schizophrenia clients were treated for the first time and in 2023 there were 934 people. The data above shows the need for a family role in the treatment process for schizophrenia clients (RSSH, 2023) .

Family is the primary *caregiver* who provides physical and mental support to schizophrenia patients. Primary *caregivers* usually consist of family members of the patient, who spend most of their time caring for the patient, providing support, and monitoring the patient's treatment and other aspects of their daily lives (Yuliastuti, Estin et., al., 2021) . Families need to understand schizophrenia, unexpected behavioral changes, coping with psychological burdens, family/community support management and reciprocity in relationships with clients in order to care for clients well. Family psychoeducational therapy is a therapy used to resolve relapse problems in schizophrenia clients. One method that can be used is psychoeducation. In psychotherapy, psychoeducation refers to the necessary elements of therapy, such as active communication about disease information and treatment strategies, as well as treatment of general aspects of the disease (Mubin & Rahayu, 2019) .

Family psychoeducation is the provision of systematic, extensive, relevant, and up-to-date information about a particular disease or condition, including its diagnosis and treatment (Motlova et., al., 2017) . Psychoeducational interventions are expected to improve family knowledge. With better knowledge, sufferers can acquire better coping skills and mechanisms, so that they can have good self-care and comply with their medication. This means that the relapse rate of schizophrenia can be reduced. The results of studies conducted using the systematic review and meta-analysis methods show that psychoeducational interventions for families of psychosis patients are effective in improving medication adherence and preventing relapse. Family psychoeducation also has many benefits, including improving family knowledge and skills in caring for patients, reducing stress and burden, and reducing family emotional expression, so that the family's quality of life improves (Sin et., al., 2017) . This makes this intervention important to provide. Based on this, the researcher attempted to analyze the influence of providing family psychoeducation on the level of medication compliance in schizophrenia clients, especially in efforts to prevent repeated treatment.

METHOD

Research design and setting

This study employed a quasi-experimental design with a pre-test and post-test control group approach. The aim was to examine the effect of family psychoeducation interventions on medication adherence in schizophrenia clients. The setting was at Soeharto Heerdjan Hospital, Jakarta.

Participants

Participants were selected using purposive sampling, ensuring they met specific inclusion and exclusion criteria. The inclusion criteria includes: (1) families with a member diagnosed with schizophrenia, as confirmed by a psychiatrist, (2) family members who are the primary caregivers of the client, (3) caregivers aged 18 years or older, and (4) families willing to participate and provide informed consent. While we exclude the following participants: (1) families with members experiencing acute psychiatric conditions during the study period, and (2) families who could not attend all intervention sessions. The number of the participants were determined through G*Power. A total of 62 families were recruited for this study. They were divided equally into two groups: 31 families in the intervention group and 31 families in the control group. Participants were randomly allocated to each group using a lottery method to minimize selection bias.

Intervention

Psychoeducational intervention programs are designed to provide individuals, families, or groups with information and understanding about mental health conditions, including their causes, symptoms, and treatment approaches. These programs aim to help patients and their families manage mental illnesses such as schizophrenia, depression, and anxiety disorders. For schizophrenia, the intervention focuses on improving medication adherence, enhancing family understanding and support, reducing stigma, and preventing relapse and rehospitalization. The intervention group received a structured family psychoeducation program, which was conducted over four sessions. Each session lasted 30–60 minutes and was held weekly. The content of the sessions was present in Table 1. The control group received standard care without additional psychoeducation interventions.

Table 1.
Psychoeducation program

Session 1	Pre-test assessment and introduction to the program.
Session 2	Education on understanding schizophrenia, including its causes, symptoms, and daily life impact, as well as strategies for symptom management.
Session 3	Recovery strategies, relapse prevention, family roles in supporting schizophrenia clients, and stress management for caregivers.
Session 4	Post-test evaluation and review of progress during the one-week hospitalization or outpatient control period.

Measurements

Medication Adherence

Medication adherence was assessed using the Morisky Medication Adherence Scale (MMAS-8), a widely used and validated instrument. The MMAS-8 has demonstrated good internal consistency (Cronbach's alpha = 0.83) and strong predictive validity for measuring adherence across various patient populations (Putri, 2023; Morisky et al., 2008).

Knowledge and Attitudes

Knowledge and attitudes of caregivers were measured using a structured questionnaire developed based on the Schizophrenia Knowledge Questionnaire (SKQ). The SKQ has been validated in similar studies, with reported Cronbach's alpha values ranging from 0.75 to 0.88

(Barrowclough et al., 2001). Items were modified to suit the cultural context and revalidated for content and face validity through expert panel reviews.

Demographic Data

A demographic data sheet was used to collect participant characteristics, including age, gender, education level, and employment status. This form was pretested for clarity and ease of use among a pilot sample, ensuring its relevance to the study objectives.

Data collection

Data collection was conducted in two phases: baseline (pre-test) and post-intervention (post-test). At baseline, demographic data were gathered, and initial assessments of medication adherence, knowledge, and attitudes were conducted using the respective instruments. Post-test data were collected immediately after the completion of the intervention. This included reassessing medication adherence, caregiver knowledge, and attitudes. Data collection was carried out by trained researchers who ensured consistency and minimized bias during the process. Instruments were administered individually to caregivers to ensure accurate responses. All data were recorded in a secure database for subsequent analysis.

Data analysis

Before statistical analysis, data normality was assessed using the Shapiro-Wilk test to determine the appropriate statistical methods. Non-parametric tests were applied to non-normally distributed data, while parametric tests were used for data that met normality assumptions. Descriptive statistics summarized demographic characteristics, with results presented as frequencies, percentages, and means. The Mann-Whitney U test compared outcomes between intervention and control groups, evaluating the effectiveness of the psychoeducation program. Statistical significance was set at $p < 0.05$. We ensuring a rigorous approach to evaluating the impact of family psychoeducation on medication adherence and providing a replicable framework for future studies.

RESULT

Characteristics of the participants

Table 3.2 presents the demographic characteristics of respondents. The intervention group showed that most participants were aged >41 years (41.9%), female (61.3%), had no formal education (32.3%), and were employed (67.7%). In the control group, the majority were aged >41 years (48.4%), female (77.6%), had no formal education (45.2%), and were unemployed (61.3%). These findings indicate differences in demographic characteristics between the intervention and control groups, with the intervention group showing a higher socio-economic status, as evidenced by a greater proportion of respondents with higher education levels and employment status compared to the control group.

Table 1Frequency Distribution of Respondents Based on Demographic Characteristics (n=31)

No	Respondent Characteristics	Intervention		Control	
		N	Percent (%)	N	Percent (%)
1	Age Group				
	20 – 30 Years	6	19.4	7	22.6
	31 – 40 Years)	12	38.7	9	29.0
	> 41 Years	13	41.9	15	48.4
		31	100.0	31	100.0
2.	Gender				
	Man	12	38.7	7	22.6
	Woman	19	61.3	24	77.6

		31	100.0	31	100.0
3.	Level of education				
	No school	10	32.3	14	45.2
	Elementary/Middle School	3	9.7	5	16.1
	High School/D3	9	29.0	7	22.6
	S1/S2/S3	9	29.0	5	16.1
		31	100.0	31	100.0
4.	Employment Status				
	Unemployed	10	32.3	19	61.3
	Employed	21	67.7	12	38.7
		31	100.0	31	100.0

Participants' Knowledge About Schizophrenia

Table 2
Distribution of Knowledge about Schizophrenia (n=31)

Knowledge About Schizophrenia	Intervention				Control			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	f	%	N	Percent (%)	N	Percent (%)	N	Percent (%)
Not enough	17	54.8	7	22.6	16	51.6	12	38.7
Enough	4	12.9	13	41.9	10	32.3	14	45.2
Good	10	32.3	11	35.5	5	16.1	8	16.1

Based on table 3 presents knowledge about schizophrenia among the participants. The findings indicate a notable difference in knowledge improvement between the intervention and control groups. The intervention group, which received psychoeducation, exhibited greater knowledge gains compared to the control group, which received only standard education. This underscores the effectiveness of the psychoeducation program in enhancing knowledge about schizophrenia.

Participants' Attitudes

Table 3 Attitudes among the participants (n=31)

Attitude	Intervention				Control			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	f	%	f	%	f	%	f	%
Low	17	54.8	7	22.6	20	64.5	18	58.1
Enough	9	29	10	32.3	6	19.4	8	25.8
Good	5	16.2	14	45.1	5	16.1	5	16.1

Based on table 4, the intervention group showed significant improvements in attitudes toward schizophrenia. These results highlight a clear difference in attitude changes between the intervention and control groups. The intervention group, which participated in psychoeducation, developed better attitudes compared to the control group, which showed minimal improvement after standard education. This finding underscores the positive impact of psychoeducation in fostering more supportive and informed attitudes among caregivers.

Medication Adherence

Table 4Frequency Distribution of Medication Adherence among Skizofrenia Patients (n=31)

Medication Compliance	Intervention				Control			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	N	Percent (%)	N	Percent (%)	N	Percent (%)	N	Percent (%)
Not obey	20	64.5	5	16.1	19	61.3	19	61.3
Obedient	11	35.5	26	83.9	12	38.7	12	38.7

Based on table 5 the largest proportion value was obtained between pretest and posttest. From the table above, it appears that there is a difference in medication compliance between the intervention group and the control group, where the percentage of *posttest* in both groups was compliant with taking medication after being given psychoeducation compared to the control group that was not compliant when given standard education. Therefore, the intervention group had better medication compliance than the control group that was not compliant with taking medication properly.

The Influence of Psychoeducation on Knowledge, Attitudes and Compliance in Taking Medication

Table 6.
The Influence of Psychoeducation on Knowledge, Attitudes and Medication Adherence

Variables	Intervention				Control				*p value*
	Factor	N	Mean	Difference	Factor	N	Mean	Difference	
Knowledge	Pre-Test	31	25.89	11.22	Pre-Test	31	28.11	6.78	0.023
	Post-Test	31	37.11		Post-Test	31	34.89		
Attitude	Pre-Test	31	25.11	12.78	Pre-Test	31	29.06	4.9	0.001
	Post-Test	31	37.89		Post-Test	31	33.94		
Medication Compliance	Pre-Test	31	25.10	12.80	Pre-Test	31	29.52	3.96	0.001
	Post-Test	31	37.90		Post-Test	31	33.48		

Table 6 illustrates the mean increases in knowledge, attitude, and medication adherence for both the intervention and control groups. The difference in mean scores between the two groups was statistically significant ($p = 0.023$, $p < 0.05$). The difference in mean scores between the groups was statistically significant ($p = 0.001$, $p < 0.05$). The difference in mean scores between the groups was also statistically significant ($p = 0.001$, $p < 0.05$). These findings highlight the effectiveness of the psychoeducation intervention in significantly improving knowledge, attitudes, and medication adherence compared to standard care.

***N-Gain* Test**

N-Gain (*Normalized Gain*) aims to determine the effectiveness of using a method in *one group pretest* and *posttest* research design using experimental and control groups. The results of the *N-Gain score test* can be seen below this table:

Table *7.*
5-*Gain Score* Test

N-Gain score	Intervention				Control			
	Min	Max	Mean	Std Deviation	Min	max	Mean	Std Deviation
N-Gain Score Knowledge	0	1	0.41	0.356	-0.60	1.00	0.1403	0.31358
N-Gain Percent Knowledge	0	100	41.09	35,604	-60.00	100.00	14,0284	31,35770
N-Gain Score Attitude	0	1	0.38	0.449	0.00	0.37	0.0413	0.09025
N-Gain Percent Attitude	0	100	37.90	44,870	0.00	36.67	4,1275	9,02521
N-Gain Score Medication Compliance	0	1.00	0.3182	0.33187	-2.50	0.50	-0.0942	0.68556
N-Gain Percentage of Medication Compliance	0	100.00	31,8161	33,18665	-250.00	50.00	-9,4157	68,55559

Based on the N-Gain Score calculations presented in Table 3.6. These findings indicate that the use of a psychoeducation module effectively improved knowledge about schizophrenia, whereas standard education alone resulted in minimal improvement. These results highlight

that psychoeducation modules significantly improve knowledge, attitudes, and medication adherence among schizophrenia clients, while standard education alone yields minimal or no improvement.

DISCUSSION

Family characteristics in this study

This study reveals several demographic trends and their potential influences on the intervention and control groups. The majority of respondents in both groups were over 41 years old (Asymp Sig. [2-tailed] = 0.958), indicating no significant difference between the groups. This age group is often associated with broader life experiences and emotional maturity, which can aid in decision-making and adaptability. However, maturity is not solely determined by age but is influenced by personal experiences and social environments. Similarly, women comprised the majority in both groups (Asymp Sig. [2-tailed] = 0.172), reflecting their traditional caregiving roles within families. Women's higher empathy and instinct in caring for sick family members align with societal and cultural norms that often assign caregiving responsibilities to women, as noted by Notoatmodjo (2018).

The study also found that most respondents in both groups had low educational levels, with no significant difference between them (Asymp Sig. [2-tailed] = 0.148). Limited education can hinder understanding and adherence to treatment regimens, often due to a lack of knowledge about treatment goals or difficulties accessing medication. Nevertheless, support and guidance from healthcare providers can help mitigate these barriers, improving compliance and health outcomes. Employment also emerged as a factor influencing medication adherence. Actively working individuals may struggle to monitor and remind sick family members about their treatment, leading to irregular medication use and potential relapses. However, this finding contrasts with Mostafa's research (2023), which suggests that employment does not significantly impact adherence to therapy regimens. These findings highlight the interplay of demographic and social factors in shaping health behaviors and outcomes

The Impact of Psychoeducation in Intervention Group and Control Group

The Gain Score test shows a significant difference in knowledge, attitude, and medication adherence between the intervention group receiving psychoeducation and the control group receiving standard education. In the intervention group, the mean improvement was 41.09% for knowledge, 37.90% for attitude, and 31.82% for medication adherence, while the control group showed far lower improvements of 14.03%, 4.13%, and a decline of 9.42% in medication adherence, respectively. These findings highlight the critical role of psychoeducation in empowering families to better care for schizophrenia clients. By enhancing family knowledge and attitudes and fostering active involvement in care, psychoeducation minimizes the risk of relapse and improves the client's quality of life. A well-designed psychoeducational program, combining cognitive skill-building, family involvement in decision-making, and emotional support, is essential for ensuring long-term treatment success and fostering positive outcomes for both clients and their families (Motlova et., al., 2017).

The Influence of Psychoeducation on Knowledge and Attitude of Family Members with Schizophrenia patients, and Medication Adherence in Schizophrenia patients

The study demonstrated that psychoeducation significantly impacted medication adherence, family knowledge, and attitudes in managing schizophrenia clients, as evidenced by statistical

differences between the intervention and control groups. For family knowledge, the Mann-Whitney test showed a significant difference (Asymp Sig. [2-tailed] = 0.023, $p \leq 0.05$), indicating that psychoeducation effectively improved understanding about schizophrenia. Knowledge is crucial in shaping health behavior, as individuals with higher knowledge and motivation are more likely to adhere to prescribed treatments (Mamang, 2022) . Psychoeducation, delivered systematically, helps families better understand schizophrenia, reduces stigma, and enhances their ability to support clients, ultimately lowering relapse rates and improving the quality of life for both clients and their families (Mokodongan, et al., 2023).

Similarly, psychoeducation positively influenced family attitudes, with the Mann-Whitney test yielding a significant difference (Asymp Sig. [2-tailed] = 0.001, $p \leq 0.05$). This aligns with findings from Tristiana et al. (2019) , which highlighted that poor attitudes, often rooted in ignorance, hinder family support and care. Structured psychoeducation can address this by increasing motivation, emotional involvement, and social support, leading to better care at home and reduced stigma (Dhewi, et al., 2019). Families with positive attitudes contribute significantly to relapse prevention and the client's overall mental health and recovery. The study also revealed a significant improvement in medication adherence among families in the intervention group (Asymp Sig. [2-tailed] = 0.001, $p \leq 0.05$). Compliance with prescribed medication is critical for preventing relapses in schizophrenia clients, and families play a pivotal role in ensuring adherence (Fausia, 2020). As the primary support system, families provide direct care and supervision, especially at home. Psychoeducation equips families with the necessary knowledge, emotional resilience, and strategies to support clients effectively, fostering ongoing treatment and relapse prevention. By addressing critical aspects such as understanding schizophrenia, medication management, and reducing stigma, psychoeducation strengthens the family's capacity to care for clients, ultimately enhancing their quality of life and treatment outcomes.

CONCLUSION

The findings of this study demonstrate that psychoeducation has a significant impact on improving family knowledge, attitudes, and medication adherence among schizophrenia clients at Soeharto Heerdjan Hospital. The study identified key family characteristics, including age, gender, education, and occupation, that influence caregiving dynamics. Baseline assessments highlighted the need for structured interventions to address gaps in family knowledge, attitudes, and medication adherence. After implementing the psychoeducational intervention, families in the intervention group showed notable improvements compared to the control group, emphasizing the effectiveness of targeted education in fostering better caregiving practices.

These results underscore the critical role of family involvement in supporting schizophrenia clients. By equipping families with the knowledge and skills to provide effective care, psychoeducation not only enhances treatment adherence but also reduces the likelihood of relapse and hospitalization. This study highlights the potential for integrating psychoeducational programs into standard mental health care practices, offering a pathway to improve the quality of life for clients and their families while contributing to better long-term treatment outcomes.

ACKNOWLEDGEMENTS

We would like express of gratitude to Soeharto Heerdjan Hospital, Jakarta as the institution that support this study financially.

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