SAGE Open Nursing
Volume 10: 1–13
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DOI: 10.1177/23779608241231000
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Effectiveness of an Integrative Empowerment Intervention for Families on Caring and Prevention of Relapse in Schizophrenia Patients

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Abstract

Introduction: Patients with schizophrenia require extended treatment and recovery, leaving their families and support systems feeling helpless. Integrative empowerment is a strategy that utilizes outside-in and inside-out empowerment to increase the ability of families to care for their loved ones and prevent relapse.

Objective: This study aimed to investigate the impact of integrative empowerment intervention on enhancing the family's ability to care for and prevent relapse in patients with schizophrenia.

Methods: The study employed a quasi-experimental with a pre-test and post-test control group design. The research sample was comprised of 70 individuals from nuclear families residing in Semarang, all of whom were responsible for the care of individuals with schizophrenia. The participants were divided into two groups: the treatment group, consisting of 35 individuals, and the control group, also comprising 35 individuals. Participant selection was carried out using purposive sampling. Module and booklet were produced as an intervention tools. The integrative empowerment intervention program spanned a period of 5 weeks, involving one session per week, each lasting approximately 60–90 min. Data analysis was conducted through the utilization of the Wilcoxon and Mann–Whitney tests. The significance level for the study was set at $p<.05$.

Results: There was a significant change in the family's ability to care for patients with schizophrenia before and after the integrative empowerment intervention ($p<.001$), while there was no change in the control group's ability to care for patients with schizophrenia ($p>.05$). Integrative empowerment had a significant impact on increasing the family's ability to care for and prevent relapse in patients with schizophrenia ($p<.001$).

Conclusions: Nurses can help families strengthen their positive caregiving experiences through the home visit program by utilizing integrative empowerment. This study's findings highlight the importance of integrative empowerment in enhancing the family's ability to care for and prevent relapse in patients with schizophrenia.

Keywords

family ability, family nursing, integrative empowerment, schizophrenia

Received 1 August 2023; Revised 6 December 2023; accepted 16 January 2024

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Introduction

Schizophrenia affects approximately 0.24 cases per 1000 populations, which translates to about 21 million cases worldwide (Sadock et al., 2017). Unfortunately, the rate of relapse among schizophrenia patients has been increasing over the last 3 years, from 28.0%, to 43.0%, and eventually to 54.0% (Pothimas et al., 2020). Records from the Psychiatric Hospital in Central Java showed that in 2021, 765 patients with schizophrenia were undergoing treatment, and the readmission rate within 0 days was 19% (Regional Psychiatric Hospital of Dr. Amino Gondohutomo, 2021). One of the factors contributing to such a short readmission period is the family's inability to care for the patient during relapse (Kandar, 2017).

According to Herdman et al. (2014), the treatment and recovery of schizophrenia patients require a long-term care which can deplete the supportive capabilities of families, leaving them feeling helpless. Kusumawardani et al. (2019) have also observed that families are unable to make appropriate decisions during schizophrenia relapse and may struggle to modify the environment to be comfortable and conducive for the patient. The prevalence of schizophrenia appears to be just the tip of the iceberg due to families' reluctance to seek healthcare facilities for the condition (Rahayuni, 2019; Verity et al., 2021).

The burden on families caring for schizophrenia patients is significant, leading to feelings of helplessness and difficulty in making appropriate decisions during relapse episodes (Koujalgi & Patil, 2013). Reluctance to seek healthcare contributes to the underestimation of schizophrenia prevalence. High readmission rates indicate the family's limited ability to care for patients during relapse (Shamsaei et al., 2015). Hence, it is crucial to investigate the effects of interventions aimed at bolstering family capacities and enhancing long-term patient outcomes. The development of an integrative empowerment intervention that centers on families as caregivers and aims to prevent relapses in individuals with schizophrenia is an immediate priority.

Empowerment interventions are designed to enhance individual or community capacity for informed decision-making and self-control, as explored in the existing literature (Indah Iswanti et al., 2023; Robbins et al., 2002). An integrative empowerment approach distinguishes itself by encompassing a broader spectrum of factors and acknowledging the interconnectedness of biological, psychological, social, and environmental dimensions. Unlike more narrowly focused interventions, the integrative model adopts a holistic perspective, recognizing the complex interplay of individual, family, and community dynamics (Indah Iswanti et al., 2023). This approach seeks sustainable, long-term impacts, addressing not only immediate empowerment needs but also influencing systemic changes that support empowerment over time.

The literature on empowerment interventions suggests the need to identify and use family resources and strengths, such as acceptance of schizophrenia and the development of spirituality (Indah Iswanti et al., 2023; Mouchrek & Benson, 2023). Therefore, the integrative empowerment intervention is unique in its focus on family-centered care and prevention of relapses in individuals with schizophrenia, and it seeks to address the complex interplay of individual, family, and community dynamics.

Review of Literature

Schizophrenia is a debilitating mental disorder with persistent symptoms requiring prolonged treatment (Leucht et al., 2012). It ranks among the top 15 global causes of disability, imposing significant financial burdens on patients, families, and society (Domínguez-Martínez et al., 2017; Sadath et al., 2015; Vos et al., 2017). Symptoms include disruptions in cognition, perception, behavior, such as delusions, hallucinations, disorganized speech, and impaired functioning (American Psychiatric Association, 2013; Buckley & Foster, 2008).

The inability of families to effectively care for and prevent relapse in individuals with schizophrenia can have significant and wide-ranging impacts (Chakraborty et al., 2013). One of the consequences is increased treatment costs, as the lack of adequate family support may result in prolonged hospitalizations, frequent outpatient visits, and the need for additional interventions. The extended care duration places a strain on both the family and the patient, as they face ongoing challenges associated with managing the symptoms and navigating the complexities of the illness (Yu et al., 2021; Zhou et al., 2020).

Findings of previous study demonstrated the effectiveness of the empowerment intervention in diminishing feelings of hopelessness in individuals with schizophrenia (Hasan & Musleh, 2017). Another previous study discovered that family interventions not only reduce the frequency of relapses and hospitalizations among individuals with schizophrenia but also enhance the overall family environment (Pharoah et al., 2010). In contrast, a different study highlighted the limited availability of family interventions with a primary focus on the well-being of family caregivers. Most interventions tend to emphasize improvements in individuals with schizophrenia, particularly in terms of relapse rates (Awad & Voruganti, 2008).

The integrative empowerment model is an intervention that combines outside-in empowerment and inside-out empowerment (Zhou et al., 2020). The basic components of the integrative empowerment model include schizophrenia management and caregiver stress management to address the difficulties and stressful situations faced by families in caregiving. Additionally, it helps families grow and explore new meanings in the process of caring for the patient by assessing positive aspects and emphasizing contributions in the relationship (Zhou et al., 2020).

Family-focused interventions that enhance understanding of schizophrenia and promote healthier family dynamics have dual benefits for both individuals with schizophrenia and their families. These interventions aim to effectively

manage the illness and symptoms while improving family relationships and overall functioning (Chien, Ma et al., 2020). High caregiving burden can lead to high emotional expression towards patients and increase the risk of relapse, thus family interventions with supportive and educational elements is crucial in meeting the family's health needs (Chien, Bressington et al., 2020). Therefore, the objective of this study was to determine the impact of the integrative empowerment intervention on improving the family's ability to care for and prevent relapse in patients with schizophrenia.

Methods

Design

The study was a quantitative quasi-experiment with a pre-test and post-test control group design.

Research Question

The following research question were formulated in this study, including: (1) What is the effect of an integrative empowerment model on family members ability to provide caregiving including fulfilling activities of daily living (ADL) needs, assisting social interactions, and assisting productive skills towards schizophrenia patient, when comparing the intervention and control groups before and after the intervention?, (2) What is the effect of an integrative empowerment model on family members ability to prevent relapse, including recognizing relapse symptoms, acceptance of schizophrenia, medication adherence, and utilization of health services towards schizophrenia patient, when comparing the intervention and control groups before and after the intervention?

Hypothesis

Hypothesis of this study were as follows:

- (H1) the integrative empowerment model has a significant effect on the capability of family members to support individuals with schizophrenia, encompassing their ability to help with ADLs, facilitate social interactions, and assist in developing productive skills for the patient,
- (H2) the integrative empowerment model has a significant effect on family members' capacity to prevent relapse in schizophrenia patients, including their ability to recognize relapse symptoms, accept the condition of schizophrenia, adhere to medication, and make use of healthcare services.

Sample and Settings

The study population consisted of all core families who cared for schizophrenia patients and lived in the city of Semarang. The sample size was determined using the formula for the difference between two proportions (Lemeshow et al., 1990), which was resulted in minimum sample of 70 respondents, including 35 respondents in the treatment group and 35 respondents in the control group using purposive sampling techniques. The selection of the treatment group was carried out at the Rowosari Health Center and the control group at the Kedungmundu Health Center Semarang city, where both Health Centers had the highest rate of schizophrenia in the city of Semarang. The selected health center serves a diverse range of individuals with various mental health needs. Support services for families, including educational programs and counseling, are provided. The hospital staff comprises healthcare professionals such as doctors, nurses, and therapists. Additional specialists like psychiatrists and psychologists were also contributed.

Participants were selected based on specific inclusion criteria, which included the following: (1) core family members (such as father, mother, or child) residing in the same household as the schizophrenia patient; (2) providing daily care for the schizophrenia patient at home; (3) Having a minimum of 1 year of experience in caring for schizophrenia patients; (4) age ranging from 20 to 60 years; (5) having a family member with schizophrenia who had received treatment at the respective Health Center in the development area.

Participants who fulfilled any of the specified exclusion criteria, which encompassed failure to complete the follow-up period, patient mortality, or withdrawal from the study due to lack of willingness to continue participating in the intervention, were excluded from the study. Nevertheless, in this study, none of the patients met the specified exclusion criteria, and thus, no participants were excluded from the study.

Instruments

Self-reported questionnaires were utilized to collect information from participants. The authors received written permission from the original questionnaire developer to translate and modify the questionnaires for the study by electronic mail. All ethical aspects related to instruments used have been resolved. Furthermore, construct validity and reliability testing were performed in this study. The instruments development was part of the Doctoral Dissertation and uploaded to university repository as unpublished work. Three instruments were used to collect the data, namely demographic datasheet, family ability to care for schizophrenia patient questionnaire, and family ability to prevent relapse questionnaire.

Firstly, a demographic datasheet was developed by the researchers to describe the characteristics of respondents, including gender, age, educational level, occupational status, family income, social security status, and relationship status with the patient. Secondly, the questionnaire to measure family ability to care for schizophrenia patient consists of three indicators, including fulfilling ADL needs, assisting social interactions, and assisting productive skills, with 18 items.

1. Indonesian version of the fulfillment ADL needs questionnaire, which includes 10 statements derived from the Barthel index, as established by Fitryasari et al. (2021). After computing the validity and reliability testing, this questionnaire exhibited construct validity scores ranging from 0.472 to 0.824 and Cronbach's alpha score of 0.912, demonstrating the validity and reliability of its items.
2. Indonesian version of the Caregiving Tasks in Caring for an Adult with Mental Illness Scale (CTiCAMIS) comprises 5 items, developed by Fitryasari et al. (2021) to assess a family's ability to assist in the social interactions of schizophrenia patients. After computing the validity and reliability testing, CTiCAMIS construct validity scores ranging from 0.448 to 0.648 and Cronbach's alpha score of 0.777, indicating the validity and reliability of its items.
3. Indonesian version of the assisting productive skill questionnaire, consisting of three statements, based on the theoretical concept proposed by Janardhana et al. (2018). After computing the validity and reliability testing, this questionnaire demonstrated construct validity scores ranging from 0.618 to 0.771 and Cronbach's alpha score of 0.861, signifying the validity and reliability of its items.

Thirdly, the questionnaire to measure family ability to prevent relapse consists of four indicators, including recognizing relapse symptoms, acceptance of schizophrenia, medication adherence, and utilization of health services.

1. Indonesian version of relapse symptom recognition questionnaire consists of two statements developed from the concept (Tlhowe et al., 2017). After computing the validity and reliability testing, this questionnaire demonstrated construct validity scores of 0.778 and Cronbach's alpha score of 0.872, signifying the validity and reliability of its items.
2. Indonesian version of patient acceptance questionnaire consists of two statements developed from the concept (Tlhowe et al., 2017). After computing the validity and reliability testing, this questionnaire exhibited construct validity scores ranging from 0.587 to 0.834 and Cronbach's alpha score of 0.860, demonstrating the validity and reliability of its items.
3. Indonesian version of medication adherence questionnaire consists of five statements modified from the CTiCAMIS developed by Fitryasari et al. (2021). After computing the validity and reliability testing, this questionnaire exhibited construct validity scores ranging from 0.361 to 0.622 and Cronbach's alpha score of 0.738, demonstrating the validity and reliability of its items.
4. Indonesian version of health service utilization questionnaire consists of three statements developed from the concept (Tlhowe et al., 2017). After computing the validity and reliability testing, this questionnaire demonstrated construct validity scores of 0.604 and Cronbach's alpha score of 0.753, signifying the validity and reliability of its items.

Data Collection

In this study, the recruitment process began by identifying and contacting potential participants who met the study's criteria. The target population consisted of individuals from core families caring for schizophrenia patients living in the city of Semarang, Indonesia. Before enrolling participants, informed consent was obtained from each individual. Participants were selected based on specific inclusion and exclusion criteria. The study employed purposive sampling to assign participants to either the treatment group or the control group. Once eligible participants were identified, they were assigned to either the treatment group or the control group. For the treatment group, the integrative empowerment intervention program was administered in 5 weeks, with one session per week, each lasting 60–90 min. The specific content and approach of the intervention are described in Table 1. The control group did not receive the intervention but instead have received standard care or no additional intervention during the study period. Data regarding the participants' experiences, outcomes, or changes in relevant variables were collected through appropriate measures before and after the intervention. The flow diagram of selecting and recruiting participants is illustrated in Figure 1.

Study Procedure

Integrative Empowerment Intervention Module. The integrative empowerment intervention module was designed for nurses to educate family members. Additionally, booklet was also produced for family members of individuals with schizophrenia, based on information from the module. The module was developed through the integration of three stages. The first stage involved module development, where the researcher conducted a preliminary cross-sectional study to identify the factors contributing to families' ability to care for patients with schizophrenia. Seven variables were classified, including patient factors, family factors, social environmental factors, healthcare service factors, outside-in empowerment, inside-out empowerment, and family empowerment.

In the second stage, the researcher conducted three focus group discussions (FGDs) with different groups, which included families of individuals with schizophrenia, healthcare professionals (such as psychiatrists, psychologists, and mental health nurses), and social support groups for families. FGDs were carried out in several contexts and objectives including, (1) FGDs involving families of individuals with schizophrenia were conducted to delve deeply into the issues affecting these families, which are considered strategically significant, and to explore potential solutions, (2) FGDs involving healthcare professionals were performed

Table 1. The Integrative Empowerment Intervention.

Week	Duration	Activity	Location	Methods
I	10 min	Pre-test	Public health center	Explanation and discussion
	30 min	Description of the objectives and factors of family empowerment based on integrative empowerment		
	60 min	Family's approach to strengthening influencing factors and steps towards family empowerment based on integrative empowerment		
II	45 min	Management of schizophrenia patient care	Family houses	Demonstration
	45 min	Management of family stress in caring for schizophrenia patients		
III	45 min	Finding new meanings and discovering new perspectives in parenting/caring	Family houses	Demonstration
	45 min	Reflecting on the family's ability to provide care		
IV	60 min	Family's ability to care for the patient	Family houses	Demonstration
V	60 min	The ability of the family to prevent patient relapse	Family houses	Demonstration
VI-XIII	90 min	Assistance for families to perform Integrative Empowerment	Online assistance	Guidance via WhatsApp platform
XIV	30 min	Evaluation and discussion of the benefits of Integrative Empowerment	Family houses	Explanation and discussion
	10 min	Post-test		

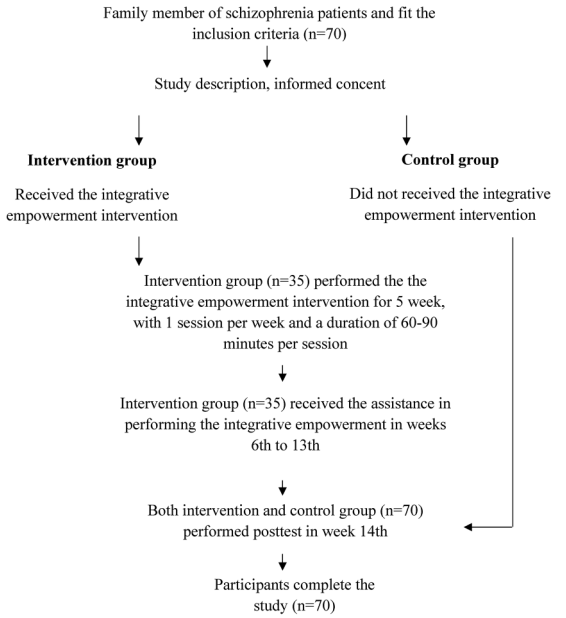

Figure 1. Flow diagram of study participants.

to extract insights from healthcare providers and gather input to enrich the module that would be developed and (3) FGDs involving social support groups were employed to ascertain the perspectives of the community, represented by Community Health Workers and Local Administrators, regarding the predefined strategic issues. The recommendations stemming from the FGDs regarding the development of the integrative empowerment-based family empowerment model for enhancing the family's caregiving abilities and preventing relapses in schizophrenia patients can be found in Table 2.

In the final stage, the researcher consulted experts to gain valuable input and validation for the module development. The selected experts were a nursing professor specializing in mental health nursing and a clinical mental health practitioner (Psychiatrist) from Mental Health Hospital in Central Java Province. The researcher compiled the recommendations from the FGDs and expert consultations and developed a module for family empowerment based on integrative empowerment, considering the feedback and suggestions from the experts. Finally, the researcher created a module book for nurses and a booklet for family members containing a readily implementable module for family empowerment rooted in integrative empowerment principles.

Integrative Empowerment Intervention. The overall intervention was developed by researcher based on previous module development and the final program consisted of four indicators including professional dominance, family participation, challenge, and collaboration. The implementation of the integrative empowerment intervention program was carried out in 5 weeks, with one session per week and a duration of 60–90 min per session, taking into account the respondents' availability and ethical principles of research. In weeks 6 to 13, family assistance in carrying out integrative empowerment. Then, on week 14, evaluation, discussion, and post-test were conducted. The researcher, who had received prior training and was acquainted with the intervention, administered the intervention. The details of the implementation are presented in Table 1.

Data Analysis

The statistical analysis of the data was performed using IBM SPSS Statistics (IBM Corp., Armonk, N.Y., USA). To describe the respondents' characteristics and the family's ability to care for and prevent relapse in schizophrenic patients, univariate analysis was utilized, including frequency (f),

Table 2. Focus Group Discussions Recommendation.

Issue	Recommendation
Apart from the onset and comorbidities, the severity of the illness is also a significant patient-related factor	1) Family counseling regarding the treatment and care of chronic schizophrenia patients, encompassing not only activities of daily living (ADL) but also the provision of motivation through positive reinforcement. 2) Families should exhibit sensitivity and concern regarding medication adherence and enhance their knowledge to recognize early signs of relapse. 3) Families should receive education on the importance of a healthy diet and meeting the nutritional needs of schizophrenia patients. In the event of common medical conditions arising, families should provide support and seek medical attention.
In addition to socioeconomic status, caregiving experience, available resources, internal vulnerabilities, and cultural values, family factors also encompass education and knowledge.	1) Implementation of government policies to ensure free access to ambulance transportation for mental health services. 2) Ongoing education involving religious leaders, healthcare professionals, and cross-sector collaboration to impart knowledge on how to care for schizophrenia patients, so that they do not become a burden and can accept patients with open arms. 3) Education through spiritually accurate content and involvement in activities that enhance spirituality and promote positive cultural values. This involves not just resigning to fate but actively seeking treatment at healthcare facilities. 4) Shared caregiving responsibilities within the family and support from other family members and the community when caring for schizophrenia patients.
Social environmental factors, particularly community social support, stigma, and the family's social network, play a significant role.	1) Families should have a social support network as a platform for sharing caregiving experiences and alleviating the caregiving burden. Psychiatric hospitals should establish community associations or family gatherings as a bridge to accommodate the schizophrenia family community. 2) Families should open to their immediate surroundings regarding the condition of schizophrenia patients. 3) It is important to educate society to offer assistance and refrain from making judgments about individuals with schizophrenia and their families
Healthcare service factors primarily revolve around the availability of infrastructure, including transportation, accessibility to nearby mental healthcare facilities, and the presence of mental healthcare professionals.	1) Families should enhance their utilization of health insurance as a social safety net for caring for patients and receive orientation on utilizing mental healthcare facilities, especially at public hospitals and community health centers. 2) The provision of free ambulance services should accessible to families and the promotion of its usage, or community-driven initiatives such as having ambulances at the local neighborhood level, like within each residential area. 3) Expanding mental healthcare services at public hospitals and community health centers by making it a flagship program and improving community mental healthcare through continuity of care initiatives.
Outside-in empowerment is primarily influenced by family factors, including the family's understanding of how to care for the patient, their coping skills in managing health issues, and the dynamics of family interactions.	1) Families should receive training and support to care for schizophrenia patients, along with coping skills tailored to the family's level of understanding. 2) Utilizing family resources, both physical and emotional, by fostering awareness of the situations that must be faced, emphasizing the concept of "unconditional love." 3) Enhancing the spiritual and emotional awareness of the family and garnering support from other family members and the community in the pursuit of the patient's treatment.
Inside-out empowerment is primarily shaped by family factors, including the family's ability to imbue caregiving with meaning and engage in self-reflection while caring for schizophrenia patients	1) Providing education and training to families regarding the patient's condition, enabling them to discover positive meaning and cultivate skills for making meaning through spiritual aspects. 2) Offering families ongoing counseling and training to enhance their self-reflection abilities, including fostering a culture of shared experiences among family members, a sort of "contagious sharing," when it comes to caregiving experiences.
Integrative empowerment is influenced by both inside-out empowerment and outside-in empowerment,	1) Families should organized into community groups for schizophrenia families to facilitate sharing experiences on effective patient management.

(continued)

Table 2. Continued.

Issue	Recommendation
encompassing the ability to manage the illness, cope with caregiving stress, and explore new meanings	2) Enhancing the quality time spent within the family as a form of healing and receiving social support from the community to reduce caregiving stress.
The family's ability to care for schizophrenia patients is influenced by integrative empowerment, encompassing the capacity to fulfill ADL needs, skills in aiding social interactions, and productive skills aligned with the patient's hobbies	1) The family should meets and facilitates the patient's ADL needs, particularly in self-care, with appropriate guidance. 2) Social support from the community aids the family in fulfilling the patient's ADL requirements. 3) Families should receive education and have their abilities enhanced to be ready and mentally prepared to help the patient integrate and socialize within their social environment. 4) The family should explore the patient's hobbies, facilitate them, and provide opportunities for the patient to engage in activities according to their abilities.

percentage (%), mean and standard deviation (SD). Normality test was performed using Kolmogorov–Smirnov test, and abnormal distribution was found among continuous data in both treatment and control group. Consequently, non-parametric testing was performed. Furthermore, Wilcoxon test was employed to examine the similarities and differences in the family's ability to care for and prevent relapse in both the intervention and control groups before and after the study. To determine the differences in the family's ability to care for and prevent relapse in the control and intervention groups after the study, the Mann–Whitney test was utilized. The level of significance was set at $p<.05$.

Ethical Consideration

The written informed consent was obtained from all human adult participants and the parents or legal guardians. Prior to their involvement, all participants granted informed consent, which exemplified the ethical principles of respecting autonomy, promoting beneficence, and avoiding non-maleficence. Moreover, participants were furnished with extensive details regarding the study's aims, procedures, confidentiality, and the freedom to discontinue their participation before data collection was finalized. By offering thorough information, safeguarding confidentiality, and emphasizing the right to withdraw, potential risks were minimized, and the well-being of the participants was safeguarded. The Ethics Review Board approved the research at the health research ethics committee of Universitas Airlangga number 2637-KEPK on September 8, 2022, and Regional Psychiatric Hospital number 420/12375 on September 7, 2022.

Results

Characteristics of the Participants and Homogeneity Testing

The results presented in Table 3 show the demographic characteristics of families responsible for the care of patients with schizophrenia in two health centers in Semarang city. The study found that the majority of caregivers in both groups were female (71.4%), middle-aged adults (60%), with a senior high school education (44.3%) and unemployed (51.4%). The study also found that the majority caregivers' income was below the minimum wage of Semarang city (71.4%), and they utilized social security through the government-funded social security agency (82.9%). The homogeneity test results showed that the data variance for respondent characteristics in both groups was the same or homogeneous ($p>.05$). This indicates that the two groups of caregivers were comparable and that any differences observed in the study were likely due to the intervention being tested, rather than differences in the characteristics of the caregivers.

Hypothesis Testing Results

The findings from the hypothesis testing of the study are detailed in the subsequent section, providing an in-depth exploration and analysis of the results.

Description of Family Caregiving Abilities and Relapse Prevention for Schizophrenia Patients. The results presented in Table 4 show that the Integrative Empowerment intervention had a positive impact on the family's ability to care for their loved ones with schizophrenia. Most families (88.6%) were able to improve their ability to meet the ADL needs of the patients, while 82.9% of families improved their ability to assist the patients in social interactions, and 68.6% of families helped patients improve their productive skills. Additionally, the intervention also had a positive effect on the family's ability to prevent relapse among their loved ones with schizophrenia. The families demonstrated an improvement in recognizing the symptoms of relapse (62.9%), accepting their loved ones (68.6%), ensuring adherence to treatment (77.1%), and utilizing mental health services (77.1%).

Table 3. Respondent Characteristics and Homogeneity Test.

Variable	Intervention group (*n*=35)		Control group (*n*=35)		Total (*n*=70)		*p*-value
	f	%	*f*	%	*f*	%	
Gender							1.000
Male	10	28.6	10	28.6	20	28.6	
Female	25	71.4	25	71.4	50	71.4	
Age							1.000
Early adulthood (20–30)	7	20.0	7	20.0	14	20.0	
Middle adulthood (31–55)	21	60.0	21	60.0	42	60.0	
Late adulthood (56–60)	7	20.0	7	20.0	14	20.0	
Educational level							.951
Elementary	10	28.6	8	22.9	18	25.7	
Junior high school	5	14.3	6	17.1	11	15.7	
Senior high school	15	42.9	16	45.7	31	44.3	
Diploma	5	14.3	5	14.3	10	14.3	
Occupational status							.758
Unemployed	19	54.3	17	48.6	36	51.4	
Laborer	6	17.1	4	11.4	10	14.3	
Self-employee	5	14.3	7	20.0	12	17.1	
Private employee	5	14.3	7	20.0	12	17.1	
State employee	0	0.0	0	0.0	0	0.0	
Retired	0	0.0	0	0.0	0	0.0	
Family income							.383
<RMW	23	65.7	27	7.1	50	71.4	
=RMW	7	20.0	3	8.6	10	14.3	
>RMW	5	14.3	5	14.3	10	14.3	
Social security status							.751
Government-funded social security agency (*BPJS*)	28	80.0	30	85.7	58	82.9	
Self-funded social security	7	20.0	5	14.3	12	17.1	
Relationship status with the patient							.836
Father	5	14.3	5	14.3	10	14.3	
Mother	4	11.4	7	20.0	11	15.7	
Siblings	11	31.4	8	22.9	19	27.1	
Son/Daughter	5	14.3	5	14.3	10	14.3	
Wife	6	17.1	4	11.4	10	14.3	
Husband	4	11.4	6	17.1	10	14.3	

Note. RMW = regional minimum wage per month; BPJS = *Badan Penyelenggara Jaminan Sosial.*

Intervention and Control Group Comparison. The results of the study in Table 5 indicate an improvement in the ability of families to care for patients with schizophrenia in fulfilling ADL needs, helping with social interaction, and productive skills with a *p*-value < .001, which means there is a significant change in the treatment group after the intervention of Integrative Empowerment compared to the control group. Meanwhile, the ability of families to care for patients with schizophrenia in the control group showed a *p*-value > .05, meaning there was no significant change after the intervention of Integrative Empowerment. Likewise, there was an increase in the ability of families to prevent relapse of schizophrenia patients, such as recognizing relapse symptoms, patient acceptance, medication compliance, and utilizing mental health services, with a *p*-value < .001, indicating a significant change in the treatment group after the intervention of Integrative Empowerment compared to the control group. However, the ability of families to prevent relapse of schizophrenia patients in the control group showed a *p*-value > .05, meaning there was no significant change after the intervention of Integrative Empowerment.

The Effects of Intervention on Family Ability to Care and Prevent Relapse in Schizophrenia Patients. The results presented in Table 6 indicate that there are differences in the improvement of family caregivers' ability to care for and prevent relapse in schizophrenia patients between the treatment and control groups. The statistical test results show a *p*-value < .001, indicating that there is an effect of Integrative Empowerment intervention on the family caregivers' ability to care for schizophrenia patients. Similarly, there are differences in

Table 4. Description of Family Caregiving Abilities and Relapse Prevention for Patients After Integrative Empowerment Intervention (n=35).

Variable	Category	Frequency (f)	Percentage (%)
Ability to care for schizophrenia patients			
Fulfillment of ADL (activities of daily living) needs	Poor (score 10–20)	0	0.0
	Sufficient (score 21–30)	4	11.4
	Good (score 31–40)	31	88.6
Assisting social interactions	Poor (score 5–10)	0	0.0
	Sufficient (score 11–15)	6	17.1
	Good (score 16–20)	29	82.9
Assisting productive skills	Poor (score 3–6)	0	0.0
	Sufficient (score 7–9)	11	31.4
	Good (score 10–12)	24	68.6
Ability to prevent relapse of schizophrenia patients			
Recognizing symptoms of relapse	Poor (score 2–4)	1	2.9
	Sufficient (score 5–6)	12	34.3
	Good (score 7–8)	22	62.9
Patient acceptance	Poor (score 3–6)	0	0.0
	Sufficient (score 7–9)	11	31.4
	Good (score 10–12)	24	68.6
Medication adherence	Poor (score 5–10)	0	0.0
	Sufficient (score 11–15)	8	22.9
	Good (score 16–20)	27	77.1
Utilizing health services	Poor (score 2–4)	0	0.0
	Sufficient (score 5–6)	8	22.9
	Good (score 7–8)	27	77.1

Table 5. Changes in Family Caregivers' Ability and Relapse Prevention for Schizophrenia Patients Before and After Integrative Empowerment Intervention.

		Pre		Post		
Variable	Group	Mean	SD	Mean	SD	p-value[§]
Ability to care for schizophrenia patients						
Fulfillment of ADL (activities of daily living) needs	Intervention	15.17	4.08	34.29	4.13	<.001*
	Control	18.14	2.53	18.71	2.90	.366
Assisting social interactions	Intervention	10.20	3.51	16.97	2.07	<.001*
	Control	10.29	3.43	10.40	3.40	.180
Assisting productive skills	Intervention	6.06	2.58	10.17	1.54	<.001*
	Control	6.71	1.77	6.77	1.71	.414
Ability to prevent relapse of schizophrenia patients						
Recognizing symptoms of relapse	Intervention	3.57	1.17	6.74	0.91	<.001*
	Control	3.57	1.11	3.51	1.14	.732
Patient acceptance	Intervention	4.03	0.78	6.94	0.93	<.001*
	Control	4.20	0.86	4.34	0.99	.327
Medication adherence	Intervention	10.51	2.92	17.14	2.13	<.001*
	Control	11.54	2.50	11.86	2.36	.070
Utilizing health services	Intervention	7.71	2.61	10.69	1.43	<.001*
	Control	8.51	2.40	8.69	2.29	.161

Note. [§]Wilcoxon test was performed.
*Significant at p<.05.

the improvement of family caregivers' ability to prevent relapse in schizophrenia patients, including recognizing relapse symptoms, patient acceptance, medication adherence, and utilization of healthcare services in the treatment group compared to the control group. The statistical test results show a p-value < .001, indicating that there is an effect of Integrative Empowerment intervention on the family caregivers' ability to prevent relapse in schizophrenia patients.

Table 6. The Effect of Integrative Empowerment Intervention on Family's Ability to Care and Prevent Relapse in Schizophrenia Patients.

Variable	Group	Pre			Post		
		Mean	SD	*p*-value[§]	Mean	SD	*p*-value[§]
Ability to care for schizophrenia patients							
Fulfillment of ADL (activities of daily living) needs	Intervention	15.17	4.08	.848	34.29	4.13	<.001*
	Control	18.14	2.53		18.71	2.90	
Assisting social interactions	Intervention	10.20	3.51	.881	16.97	2.07	<.001*
	Control	10.29	3.43		10.40	3.40	
Assisting productive skills	Intervention	6.06	2.58	.124	10.17	1.54	<.001*
	Control	6.71	1.77		6.77	1.71	
Ability to prevent relapse of schizophrenia patients							
Recognizing symptoms of relapse	Intervention	3.57	1.17	.971	6.74	0.91	<.001*
	Control	3.57	1.11		3.51	1.14	
Patient acceptance	Intervention	4.03	0.78	.315	6.94	0.93	<.001*
	Control	4.20	0.86		4.34	0.99	
Medication adherence	Intervention	10.51	2.92	.127	17.14	2.13	<.001*
	Control	11.54	2.50		11.86	2.36	
Utilizing health services	Intervention	7.71	2.61	.187	10.69	1.43	<.001*
	Control	8.51	2.40		8.69	2.29	

Note. [§]Mann–Whitney test was performed.
*Significant at $p<.05$.

Discussion

The findings revealed that integrative empowerment had a significant positive impact on the family's capacity to care for and prevent relapses in individuals with schizophrenia. This included fulfilling ADL requirements, offering support for social interactions, and enhancing productive skills. The main goal of this study was to assess how integrative empowerment affects the ability of families to provide care and prevent relapse in patients diagnosed with schizophrenia. These results imply that integrative empowerment can serve as an effective intervention for enhancing the quality of care and support that families provide to individuals with schizophrenia.

The study analyzed the family's ability to care for schizophrenia patients. The Integrative Empowerment intervention improved caregiving by enhancing daily living activities, social interaction, and productive skills. Traditionally, families relied on their knowledge without recognizing caregiving's positive impact. The intervention aimed to increase skills, knowledge, and appreciation of caregiving to prevent relapse and improve care. Results demonstrated improved family caregivers' ability to fulfill daily needs, support social interaction, and enhance skills. Previous studies by Grácio et al. (2018) and Kaakinen et al. (2018) support the importance of family caregiving for schizophrenia patients. Additionally, the treatment group receiving the integrative empowerment intervention showed improved family caregivers' ability to prevent schizophrenia relapse. This included symptom recognition, patient acceptance, medication compliance, and utilization of health services. Families have strengths in reducing relapse, such as acceptance, utilizing services, faith, patient involvement, and awareness of exacerbating factors (Tlhowe et al., 2017). Family support, including acceptance, assistance, hope, and good communication, can also prevent relapse (Indah Iswanti et al., 2023; Mamnuah, 2021; Nurhidayati et al., 2023; Wuandari et al., 2022).

The results of the study are consistent with the recovery-oriented approach to mental health care, underscoring the significance of empowering individuals and their families to actively participate in their care and recovery (Frost et al., 2017). This approach, rooted in the belief that individuals with mental illness can lead meaningful lives with proper support, emphasizes family involvement as a crucial component, providing support, encouragement, and advocacy (Park et al., 2014). The Integrative Empowerment intervention aligns with this approach by concentrating on improving family caregiving skills, fostering knowledge, promoting acceptance and support, and preventing relapse in individuals with schizophrenia (Waller et al., 2019).

After receiving Integrative Empowerment interventions, the treatment group showed significant improvement in families' ability to prevent relapses in schizophrenia patients, including symptom recognition, patient acceptance, treatment adherence, and healthcare utilization. Empowering families involves positive changes through family-centered nursing interventions, health promotion, and cultural appropriateness, enhancing competence in caring for schizophrenic patients at home. Previous studies conducted by van Es et al. (2019) and Zhou et al. (2020) support family empowerment in reducing mental health problems and improving family function. Integrative Empowerment improved schizophrenia

relapse prevention in families through symptom recognition, patient acceptance, treatment adherence, and healthcare utilization. Strong family support reduces relapse risk (Pothimas et al., 2020). Families' role includes acceptance, assistance, hope, and communication (Mamnuah, 2021). Low expressed emotion or normal affective style decreases relapse frequency (Ahmad et al., 2017). Families manage the disease through symptom recognition, advocacy, and utilizing mental health services.

The study found that the group receiving Integrative Empowerment intervention showed improved outcomes in meeting ADL needs, social interaction, and productive skills compared to the control group. This intervention provided families with knowledge, training, and support for caring for schizophrenia patients at home. It enhances family understanding and disease management abilities (van Es et al., 2019; Zhou et al., 2020). Families receiving the intervention demonstrated a greater ability to prevent relapse by recognizing symptoms, accepting the patient, adhering to medication, and utilizing healthcare services. Family involvement reduces relapse risk and improves the schizophrenia family environment. Integrative Empowerment aligns with cognitive-behavioral theory of relapse and influences the interpersonal environment of schizophrenia patients (Ong et al., 2021; Zhou et al., 2020).

Furthermore, the study underscores the necessity for a comprehensive mental health care approach that considers individual, family, and community dynamics influencing mental health and well-being (Frost et al., 2017; Park et al., 2014). The recovery-oriented approach highlights the importance of addressing social determinants such as poverty, discrimination, and social isolation, which can contribute to the onset and worsening of mental illness. In alignment with this perspective, the Integrative Empowerment intervention acknowledges the interconnected nature of biological, psychological, social, and environmental dimensions (Waller et al., 2019). It involves diverse stakeholders, including individuals, families, healthcare providers, community organizations, and policymakers, thereby aligning with the principles of a holistic recovery-oriented approach to mental health care (Shera & Ramon, 2013).

In future studies, it is important to conduct comprehensive and varied long-term research to confirm integrative empowerment's effectiveness in assisting families who support individuals with schizophrenia. Furthermore, investigating how integrative empowerment can be adapted and customized to suit specific needs within diverse cultural and demographic settings would yield valuable insights. Additionally, exploring the sustainability of improvements in caregiving quality over the long term will enhance our understanding of the intervention's enduring impact on family support systems.

Strengths and Limitations

The strength of this study lies in its clear focus on the role of psychiatric nurses in empowering families to care for and prevent relapses in schizophrenia patients. The study likely employed a systematic approach in designing and implementing the intervention, incorporating evidence-based practices and guidelines for educating and supporting families. However, there are several limitations to this study that should be noted. Firstly, the study design was not a true experimental design, which raises the possibility of selection bias among the participants. Therefore, it would be beneficial to conduct further research using a randomized control trial design. Secondly, it is important to note that the target population of this study was limited to Javanese ethnic group, and as such, the findings may only be applicable to this specific population. Future studies should aim to include a more diverse sample to determine the generalizability of the results to other populations.

Implication for Practice

The findings of the study suggest that psychiatric nurses can play a crucial role in empowering families to care for and prevent relapses of schizophrenia patients. Nurses can provide education and support to families in enhancing their skills, knowledge, and experience in nurturing the patient. They can also help families discover new meanings in nurturing and develop positive attitudes towards caring for the patient. Additionally, nurses can use the Integrative Empowerment intervention as a tool to improve the family's ability to care for and prevent relapses of schizophrenia patients. By doing so, nurses can improve the overall care and outcomes for patients with schizophrenia while also promoting the well-being of their families.

Conclusion

Integrative empowerment enhances the ability of families to care for and prevent relapses of schizophrenia patients through assessing the needs and situations of families in caring for patients, managing illness and parenting stress, such as positive caregiving experiences, and being free from depressive feelings. Additionally, it involves exploring new meanings through making meaning and self-reflection to control the family's emotional expression.

Acknowledgment

The authors thank the participants for their interest and generous participation in this study. Authors would also thank the Faculty of Nursing, Universitas Karya Husada Semarang and Universitas Airlangga, for the support and facilities provided. The authors are also grateful to the nurses and the Public Health Center Semarang City staff, who helped distribute questionnaires and in data collecting.

Author Contributions

Dwi Indah Iswanti: writing the original manuscript, substantial contributions to the conception or design of the work; or the acquisition,

analysis, or interpretation of data for the work. Nursalam Nursalam: writing the original manuscript, drafting the work or revising it critically for important intellectual content. Rizki Fitryasari: writing the original manuscript and final approval of the version to be published. Rika Sarfika: writing the original manuscript and final approval of the version to be published. I Made Moh. Yanuar Saifudin: writing the original manuscript and final approval of the version to be published.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Consideration

The written informed consent was obtained from all human adult participants and the parents or legal guardians. Prior to their involvement, all participants granted informed consent, which exemplified the ethical principles of respecting autonomy, promoting beneficence, and avoiding non-maleficence. Moreover, participants were furnished with extensive details regarding the study's aims, procedures, confidentiality, and the freedom to discontinue their participation before data collection was finalized. By offering thorough information, safeguarding confidentiality, and emphasizing the right to withdraw, potential risks were minimized, and the well-being of the participants was safeguarded. The Ethics Review Board approved the research at the health research ethics committee of Universitas Airlangga number 2637-KEPK on September 8, 2022, and Regional Psychiatric Hospital number 420/12375 on September 7, 2022.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

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