

## **Socio-demographic factors and knowledge as correlates of family caregiving ability in schizophrenia with risk of violence: A cross-sectional study**

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### **Abstract (10 pt)**

**Background:** Caregiving for individuals with schizophrenia, particularly those at an elevated risk of exhibiting violent behavior, presents significant challenges for family members, especially in regions with limited resources. It is essential to understand the factors that influence caregivers' competence to ensure effective home management and mitigate the risk of violent incidents.

**Objective:** The purpose of this study was to investigate the relationship between socio-demographic factors such as age, occupation, and education, and the knowledge and capabilities of family caregivers in managing schizophrenia patients at risk for violence.

**Method:** A quantitative cross-sectional study was conducted at Mutiara Sukma Mental Hospital in West Nusa Tenggara, involving eighty-nine family caregivers recruited through accidental sampling. Data were gathered using validated questionnaires designed to assess demographic information, knowledge regarding schizophrenia, and caregiving efficacy. Bivariate analysis was performed using the Chi-Square test, with a significance threshold set at  $p < 0.01$ .

**Results:** The majority of participants were in early adulthood (50.6%) and were employed (57.3%). The statistical analysis uncovered significant correlations between age, occupation, education, knowledge, and the caregivers' competencies in providing care ( $p < 0.01$ ). Caregivers with higher educational attainment and substantial knowledge demonstrated enhanced abilities in managing medication and addressing violent behaviors compared to those with lower educational levels or insufficient understanding of the condition.

**Conclusion:** Socio-demographic factors and health literacy play crucial roles in determining caregiving abilities. It is recommended that nursing interventions prioritize targeted psychoeducation and social support tailored for families encountering educational and socioeconomic challenges, thereby enhancing patient safety and the overall quality of care in home settings.

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## 1. Introduction

Schizophrenia is a long-lasting and debilitating severe mental disorder that significantly affects an individual's thinking, emotional control, and behavior. According to the World Health Organization, approximately 24 million people globally are affected by schizophrenia, making it a major contributor to the global disease burden (World Health Organization, 2022). The disorder commonly presents positive symptoms such as hallucinations and delusions, as well as negative symptoms like social withdrawal and lack of motivation (Correll et al., 2022). A significant concern within this clinical context is the potential for aggressive behavior and violence. Cognitive and social functional impairments often hinder a patient's ability to self-regulate, increasing the risk of violent behavior and presenting safety challenges for both the individual and their caregivers (Found et al., 2023; Whiting et al., 2022).

In Indonesia, schizophrenia has become an increasingly pressing national health issue. Data from the Basic Health Research (Riset Kesehatan Dasar/Riskesdas) indicates a notable rise in the prevalence of severe mental disorders (such as schizophrenia and psychosis), increasing from 1.7 cases per 1,000 households in 2013 to 6.7 cases per 1,000 households in 2018 (Ministry of Health, Republic of Indonesia, 2018). This upward trend underscores the urgent need for comprehensive mental health services that encompass promotion, prevention, treatment, and rehabilitation. Furthermore, mental health issues in Indonesia are disproportionately high among families with limited access to healthcare and low health literacy, exacerbating the "treatment gap" and placing additional strain on informal caregivers (Idaiani & Riyadi, 2018; Susanti et al., 2020).

Regionally, West Nusa Tenggara (Nusa Tenggara Barat or NTB) reports one of the highest rates of severe mental disorders in Indonesia, ranking third nationally, with 9.6% of households having a member diagnosed with schizophrenia or psychosis (Kustiawan et al., 2023). Specific data from the Mutiara Sukma Psychiatric Hospital, the primary referral center in the province, highlight this significant burden. In 2022, the hospital recorded 10,425 outpatient visits and 854 inpatient admissions, with 7,593 outpatient cases and 611 inpatient cases continuing into 2023. This large volume of cases necessitates long-term management strategies, where families play a crucial role, particularly given the trend of shorter hospital stays and a shift toward community-based care.

In Asian cultures, including Indonesia, families serve as primary caregivers and are considered the "first line of defense" for individuals with schizophrenia (Fitri et al., 2021). Family responsibilities extend beyond basic care to include ensuring medication compliance, providing emotional support, and de-escalating potential violent situations (Leng et al., 2019). However, the capacity of family caregivers to manage these complex responsibilities can vary and is influenced by specific socio-demographic factors. Older caregivers may demonstrate greater emotional maturity but often face physical challenges. Additionally, employment and financial status can affect their availability of resources and time (Vargas et al., 2020). The level of education also impacts health literacy, influencing the caregiver's ability to understand medical information and navigate the healthcare system (Koutra et al., 2018).

Moreover, understanding the illness is crucial for effective caregiving. Caregivers with a higher degree of mental health literacy are better equipped to identify early warning signs of relapse and aggressive behavior, allowing them to implement suitable coping mechanisms (Wong et al., 2021). In contrast, insufficient knowledge can lead to ineffective coping strategies, increased caregiver stress, and a higher likelihood of patient violence (Hanzawa et al., 2023). Although the relationship between caregiver burden and patient symptoms is well documented, there is limited research on how socio-demographic factors and knowledge interact to influence caregiving abilities, particularly for patients exhibiting a risk of violent behavior in West Nusa Tenggara.

Therefore, this study aims to investigate the relationship between socio-demographic factors (age, occupation, education) and knowledge with family caregivers' capabilities in managing schizophrenia patients at risk of violence at the Mutiara Sukma Psychiatric Hospital. Understanding these relationships is crucial for developing targeted nursing interventions and educational initiatives that aim to enhance family competencies and ensure patient safety.

## 2. Methods

### 2.1 Research design

This study employed a quantitative research design with a cross-sectional approach, allowing for the simultaneous assessment of variables at a single point in time (Polit & Beck, 2020). This design was utilized to analyze the correlation between socio-demographic factors (age, occupation, education), family knowledge, and the family's caregiving ability in managing schizophrenia patients with a risk of violent behavior.

### 2.2 Setting and samples

The study was conducted at the Outpatient Polyclinic of Mutiara Sukma Mental Hospital, West Nusa Tenggara (NTB), in 2024. The target population comprised all family members of patients with schizophrenia visiting the outpatient unit. The total population of patients identified with a risk of violence was 849. From this population, a sample size of 89 respondents was determined using Slovin's formula.

Participants were recruited using a non-probability convenience sampling technique (accidental sampling) based on specific inclusion criteria: (1) family members of patients diagnosed with schizophrenia presenting with a risk of violent behavior; (2) aged 20 years or older; (3) willing to participate in the study as respondents; and (4) literate (able to read and understand questionnaire instructions).

### Variables and operational definitions

The study examined four independent variables and one dependent variable:

**Age:** Defined as the respondent's chronological age as stated on their identity card. Age was stratified into three categories based on the Indonesian Ministry of Health classification (Depkes RI, 2013): early adulthood (20–44 years), late adulthood (45–59 years), and elderly ( $\geq 60$  years).

**Occupation:** Classifies respondents based on their employment status (employed or unemployed).

**Education:** Categorized by the highest level of formal education completed (Elementary School, Junior High School, Senior High School, or University/College).

**Knowledge:** Assessed using a schizophrenia knowledge questionnaire, with scores classified into three levels: Good, Sufficient, and Poor.

The dependent variable was Family Caregiving Ability, operationally defined as the family's competence in providing care across four domains: supervision, medication administration, management of violent behavior, and provision of emotional support.

### 2.3 Measurement and data collection;

The study examined four independent variables and one dependent variable:

#### Socio-demographic Factors:

Age: Categorized based on the Indonesian Ministry of Health classification (Depkes RI, 2013): early adulthood (20–44 years), late adulthood (45–59 years), and elderly ( $\geq 60$  years).

Occupation: Classified as employed or unemployed.

Education: Categorized by the highest level of formal education completed (Elementary, Junior High, Senior High, or University).

Knowledge: Assessed using a structured questionnaire regarding schizophrenia management. Scores were classified into three ordinal levels: Good, Sufficient, and Poor.

Family Caregiving Ability (Dependent Variable): Measured using a verified instrument based on the framework by Akemat (2025). This variable encompasses the family's competence in four key domains: (1) supervision of the patient, (2) medication administration, (3) management and de-escalation of violent behavior, and (4) provision of emotional support.

All instruments underwent validity and reliability testing before data collection to ensure psychometric rigor.

### 2.4 Data analysis;

Data were analyzed using IBM SPSS Statistics software. Univariate analysis was performed to describe the frequency distribution and percentage of respondent characteristics. Bivariate analysis was conducted using the Chi-Square test to determine the statistical relationships between the independent variables (age, occupation, education, and knowledge) and the dependent variable (family caregiving ability). In accordance with the study's rigorous standards, the level of statistical significance was established at  $p < 0.01$ .

### 2.5 Ethical considerations.

This study was conducted in strict adherence to the ethical principles of the Declaration of Helsinki (World Medical Association, 2013). Ethical approval was obtained from the Research Ethics Committee of Mutiara Sukma Mental Hospital in 2024. All participants were fully informed of their right to withdraw from the study at any time without consequence to their family member's treatment. Confidentiality and anonymity were strictly maintained by anonymizing data during analysis and storage.

## 3. Results

### 3.1 Socio-demographic characteristics of participants

The study included 89 family caregivers of patients with schizophrenia at risk of violence. The distribution of sociodemographic characteristics, including age, occupation, and education, alongside levels of knowledge and caregiving ability, is summarized in Table 1.

The analysis of age distribution reveals that half of the respondents were in the early adulthood category (20–44 years), representing 50.6% ( $n = 45$ ) of the sample. In terms of employment, the majority of caregivers were employed (57.3%,  $n = 51$ ). Regarding educational background,

the highest proportion of respondents had completed elementary school (30.3%, n = 27), followed closely by those with a senior high school education (29.2%, n = 26).

Regarding the key variables of the study, nearly half of the respondents demonstrated a "Good" level of knowledge about schizophrenia care (44.9%, n = 40), while 18.0% (n = 16) had a "Poor" level of knowledge. In terms of caregiving ability, the majority were categorized as having "Sufficient" ability (52.8%, n = 47), with 24.7% (n = 22) demonstrating "Good" ability and 22.5% (n = 20) showing "Poor" ability in managing patients with violence risks.

Table 1. Socio-demographic characteristics of the participants (n=89)

Variable	Category	Frequency (n)	Percentage (%)
Age	20-44	45	50,6
	45-59	28	31,5
	≥60	16	17,9
Occupation	Employed		
	Unemployed	21	18,3
Education	Elementary school (SD)	27	30,3
	Junior high school (SMP)	22	24,7
	Senior high school (SMA)	26	29,2
	Higher education (University)	14	15,8
Knowledge level	Good	40	44,9
	Sufficient	33	37,1
	Poor	16	18
Family caregiving ability	Good	22	24,7
	Sufficient	47	52,8
	Poor	20	22,5

### 3.2 Factors associated with family caregiving ability

Bivariate analysis using the Chi-Square test was conducted to examine the relationship between sociodemographic factors (age, occupation, education), family knowledge, and caregiving ability. The results of the cross-tabulation are presented in Table 2.

Table 2. Relationship between Sociodemographic Factors, Knowledge, and Family Caregiving Ability (n=89)

Variable	Category	Caregiving ability			p-value
		Good (n)	Sufficient (n)	Poor (n)	
Age	20-44	15	29	1	0,000
	45-59	7	18	15	
	≥60	0	0	4	
Occupation	Employed	22	27	2	0,000

Variabel	Category	Caregiving ability			p-value
		Good (n)	Sufficient (n)	Poor (n)	
	Unemployed	0	22	18	
Education	Elementary school	1	9	17	
	Junior school	high 0	15	18	
	Senior school	high 5	19	24	0,000
	Higher education	16	4	20	
Knowledge level	Good	22	17	1	
	Sufficient	0	29	8	0,000
	Poor	0	1	11	

#### 4. Discussion

The current research aimed to examine the socio-demographic factors and levels of understanding that influence the caregiving abilities of families caring for schizophrenia patients at risk of violence. The results indicated that age, profession, education, and knowledge are significant factors affecting caregiving competence. These findings highlight the complex nature of informal caregiving, where personal resources and cognitive readiness converge to impact the quality of home-based care (Chan et al., 2021).

Research has consistently shown a strong, positive correlation between knowledge and caregiving effectiveness. This observation aligns with established behavioral theories, such as those proposed by Notoatmodjo (2018), which suggest that knowledge is a vital precursor to adopting health-enhancing behaviors. In the context of schizophrenia, caregiving ability involves more than just mechanical tasks; it requires complex decision-making, such as identifying early signs of aggression (e.g., pacing, verbal hostility) and executing de-escalation techniques (Whiting et al., 2021). Our findings support Ebrahimi et al. (2018), who reported that psychoeducation significantly improves caregivers' management abilities. A common issue is the lack of knowledge regarding the cyclical nature of schizophrenia and medication adherence, often cited as a significant factor in relapse and re-hospitalization (Phanthunane et al., 2021). Without sufficient knowledge, families may resort to coercion or avoidance when confronted with aggression, which ironically increases the patient's risk of violence (Molle & Horhorow, 2019). Consequently, knowledge empowers families to shift from passive caretakers to active therapeutic collaborators.

The level of education was significantly related to caregiving ability, with higher education predicting improved outcomes. This association is likely mediated by health literacy. Caregivers with more formal education possess enhanced cognitive capacities, enabling them to understand intricate medical treatments, navigate the healthcare system, and translate complex psychiatric concepts into practical care plans (Varghese et al., 2020). In contrast, lower education can obstruct understanding of the biological underpinnings of schizophrenia,

fostering supernatural interpretations of the illness or stigma that impede effective care (Kustiawan et al., 2023). This result aligns with findings from Yesofu et al. (2020), which suggest that caregivers with lower literacy levels require simplified, visual-based interventions rather than conventional text-based discharge instructions to achieve similar levels of caregiving effectiveness.

Our results revealed that employed caregivers exhibit better caregiving abilities than those who are unemployed. While holding a job may impose time constraints, it provides essential financial security. Financial stress is a well-recognized component of caregiver burden, often heightening psychological distress and reducing the emotional capacity available for patient care (Stanley et al., 2017). Financial resources enable access to better nutrition, transportation to healthcare facilities, and potentially paid support, thereby alleviating the "objective burden" of caregiving (Swaroop et al., 2013). Unemployed caregivers, frequently dealing with economic uncertainty, may exhibit higher levels of expressed emotion (EE)—such as criticism or hostility, which are known to trigger violent behaviors in schizophrenia patients (Onwumere et al., 2018). Therefore, economic stability emerges as a protective factor that improves overall care quality.

The study indicated that caregivers within the productive age range (20–44 years) displayed superior caregiving abilities compared to older caregivers. Caring for a patient at risk of violence can be physically demanding, often requiring agility to maintain safety during acute episodes (Gierveld, 2005). Younger caregivers tend to possess greater physical resilience and adaptability. Additionally, generational differences in digital literacy may play a role; younger caregivers are typically more skilled at using online resources to find information and social support (Azman et al., 2019). In contrast, older caregivers, who are often the patient's parents ("aging in place"), face the "double burden" of their own declining health and the increasing dependency of their adult child (Caqueo-Urízar et al., 2014; Iseselo et al., 2016). This situation underscores a significant vulnerability in the current community care model, where aging parents may ultimately be unable to manage violent behaviors safely.

## 5. Implication and limitations

The findings of this research have important implications for psychiatric nursing practices in Indonesia. First, discharge planning must be customized based on family risk assessments. Nurses should identify "at-risk" caregivers, particularly those with low educational backgrounds, unemployment, or advanced age, and ensure they receive increased follow-up support (Hsiao & Ritala, 2021). Second, psychoeducation programs must be tailored to meet the individual needs of each participant. For families with limited education, training focused on simulations for de-escalation techniques may be more effective than providing written materials (Fitriani et al., 2021). Overall, community nurses should advocate for social support initiatives that connect unemployed caregivers to job training programs or peer support groups to reduce the socioeconomic pressures contributing to caregiver burdens (Yusuf et al., 2022).

Several limitations are worth noting. The cross-sectional nature of the study prevents causal conclusions; for instance, caregivers who have greater innate abilities might be more likely to seek knowledge, rather than knowledge enhancing their abilities. Additionally, the research was confined to a single referral center in NTB, which may limit the applicability of the results to other regions with different cultural attitudes toward mental illness. Furthermore, the reliance on self-reported data can introduce social desirability bias, potentially causing families to overstate their capabilities (Polit & Beck, 2021). Future studies should employ longitudinal methods and observational assessments to more accurately evaluate caregiving capabilities.

## 6. Conclusion

This research concludes that the ability to care for individuals with schizophrenia who are at risk of violence is significantly influenced by knowledge, education, employment status, and age. These factors do not operate independently; instead, they create an interconnected profile of caregiver preparedness. The results underscore the need to shift from a one-size-fits-all approach to family counseling toward targeted and culturally sensitive interventions. By addressing the unique educational and socioeconomic challenges that families face, nursing professionals can enhance the safety and effectiveness of home-based psychiatric care, ultimately leading to improved outcomes for this at-risk patient group.

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## Author contribution

RR was responsible for the conceptualization and design of the study, data acquisition, and drafting the initial manuscript. NMS, IMES, and ND supervised the research, provided critical revisions for important intellectual content, and validated the methodology and data analysis. All authors read and approved the final manuscript.

## Conflict of interest

The authors declare that they have no competing interests.

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