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Residence location, medication adherence and family knowledge in patients with schizophrenia

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Abstract

Background: Schizophrenia is a neurological disorder impacting perception, thinking, language, emotions, and social behavior. Continuous treatment and care are essential to prevent relapses, allowing patients to lead productive lives.

Purpose: To know the relationship between residence location, medication adherence, and family knowledge in patients with schizophrenia

Method: This quantitative study employed a correlation analytical research design and a cross-sectional approach. Independent variables (family knowledge and residence location) and the dependent variable (compliance) were measured simultaneously at one point in time. The research took place at the Surakarta Mental Hospital on May 15, 2022, with a sample of 93 respondents selected through purposive sampling.

Results: The residence location does not significantly impact medication compliance. This is attributed to transportation factors among respondents, as evidenced by the chi-square test results ($p = 0.013$; OR = 3.108).

Conclusion: There is a significant relationship between family knowledge and compliance with medication control. And there is no significant relationship between residence location and compliance with control.

Suggestion: For mental health services, it is recommended to increase and disseminate information to patients' families about the importance of follow-up visits for schizophrenia patients. Future researchers should explore additional factors influencing patient compliance with medication control that were not addressed in this study.

Keywords: Family Knowledge; Medication Adherence; Residence Location; Schizophrenia.

INTRODUCTION

Mental health remains a significant health issue worldwide, including in Indonesia. Mental health is a crucial sector in achieving overall health. About 450 million people suffer from mental and behavioral disorders globally, with the highest number in India (4.5%). One in four people will experience one or more mental disorders during their lifetime. If not properly addressed, mental disorders can worsen and ultimately burden families, communities, and governments (Ayuningtyas & Rayhani, 2018).

Mental well-being is a fundamental component of the WHO's definition of health. Good mental health enables people to realize their potential, cope with

normal life stresses, work productively, and contribute to their communities. Despite its importance, achieving mental health remains a long journey globally. There are many unfavorable trends that need to be changed, such as neglect of mental health services and care, human rights violations, and discrimination against people with mental disorders and psychosocial disabilities (World Health Organization, 2013).

The highest number of mental disorder cases in Indonesia is found in the provinces of DKI Jakarta (24.3%), Nangroe Aceh Darussalam (18.5%), West Sumatra (17.7%), West Nusa Tenggara (10.9%),

South Sumatra (9.2%), and Central Java (6.8%). The prevalence of emotional mental disorders characterized by depression and anxiety symptoms in individuals aged 15 and older is 6%, or about 14 million people, while the prevalence of severe mental disorders like schizophrenia is 1.7 per 1000 population, or about 400,000 people. The prevalence of mental disorders in Central Java has been increasing year by year. In 2013, the number of mental disorder patients in Central Java was 121,962, which increased to 260,247 in 2014, and to 317,504 in 2015 (Ministry of Health of the Republic of Indonesia, 2023).

Despite adherence to antipsychotic medication being fundamental in the treatment and prevention of disease relapse, non-compliance is a major issue among schizophrenia patients. Research shows that non-compliance with antipsychotic medication is a significant problem among schizophrenia patients. Reducing the number of antipsychotic medications and providing drugs in rural areas can reduce non-compliance rates (Tareke, Tesfaye, Amare, Belete, & Abate, 2018).

Schizophrenia patients typically find it difficult to return to their original state. Even if the patient recovers, they cannot return to their initial condition. Continuous and regular treatment and care for schizophrenia patients are necessary to prevent relapse (Kusumawati & Hartono, 2010).

The main issue for patients who have been hospitalized is adherence to follow-up medication. Families play a crucial role in ensuring patients regularly attend follow-up appointments, so they must have sufficient knowledge. Family knowledge about medication schedules, how to obtain medication according to the prescribed dosage, and following the recommendations of nurses and other healthcare providers is a key factor in encouraging families to bring patients for follow-up visits to the hospital. Knowledge is a critical factor in shaping actions. Knowledge based on proper understanding is expected to foster new behaviors, particularly family independence in caring for family members with schizophrenia. Family knowledge about medication schedules, how to obtain medication according to the prescribed dosage, and following the recommendations of nurses and other healthcare providers is a key factor in encouraging families to bring patients for follow-up visits to the hospital

(Stuart & Sundeen, 2016).

Non-compliance with medication occurs in all chronic medical disorders. Non-compliance is a particular challenge in schizophrenia because the disease is associated with social isolation, stigma, comorbid substance abuse, and the impact of symptom domains on compliance, including positive and negative symptoms, lack of insight, depression, and cognitive impairment. Non-compliance exists on a spectrum, is often underreported and underestimated by doctors, but affects more than one-third of schizophrenia patients annually. Non-compliance increases the risk of relapse, rehospitalization, and self-harm, raises hospitalization costs, and lowers quality of life (Haddad, Brain, & Scott, 2014).

The accessibility of the patient's residence to the hospital is one factor influencing family compliance in bringing patients for follow-up medication. The residence location of represents the amount of time the patient and family need to travel to reach healthcare facilities. Difficult access increases the risk of not completing treatment. Faster travel time facilitates easier access to healthcare services because it shortens the required travel time (Azwar, 2014).

RESEARCH METHOD

A quantitative research project with a correlational analytical design and a cross-sectional approach was applied in this study. Independent variables (family knowledge and residence location and the dependent variable (compliance) were measured only once at the same time. The research was conducted at Surakarta Mental Hospital on May 15, 2022, with a sample of 93 respondents chosen through purposive sampling. The study was approved by the ethics committee of Sahid University Surakarta under the number: 024/SP/LPPM/Usahid-Ska/VII/2023.

Inclusion criteria for this study included families of schizophrenia patients who had been receiving outpatient care for at least six months, families who were literate, and families living with the patient. Exclusion criteria included incomplete, missing, or illegible patient medical records and families who did not complete the questionnaire entirely. The independent variables in this study were family knowledge and residence location, while the

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dependent variable was medication compliance in schizophrenia patients at Surakarta Mental Hospital.

To collect data on respondent characteristics, the researchers used a questionnaire with five questions addressing the age, gender, education, and occupation of the families of schizophrenia patients at the mental health outpatient clinic of Surakarta Mental Hospital. To measure the knowledge variable, the researchers employed a 21-item questionnaire, validated and reliable, to gauge the family's understanding of schizophrenia. Positive responses were scored as 1 for correct answers and 0 for incorrect answers, while negative statements were scored as 0 for correct answers and 1 for incorrect answers. Good knowledge was defined as correctly answering more than 50% of the questions, while poor knowledge was defined as correctly answering less than 50%.

To measure the distance variable, a questionnaire determined whether the patient's residence was within or outside the city of Surakarta.

A close distance was defined as residing within Surakarta, and a far distance as residing outside Surakarta. For the compliance variable, the researchers used an observation sheet to record the number of on-time visits by schizophrenia patients to the mental health outpatient clinic at Surakarta Mental Hospital. Compliance was defined as 50% or more on-time visits within six months, while non-compliance was defined as less than 50%.

The data analysis involved statistical tests. Univariate analysis was employed to examine the frequency distribution of each variable, including both dependent and independent variables such as family knowledge about schizophrenia, residence location, and compliance with control. Bivariate data analysis utilized the chi-square test to determine if there was a relationship between family knowledge about schizophrenia and treatment compliance, as well as between residence location and treatment compliance.

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RESEARCH RESULTS

Table 1. Characteristic of the Respondents (N=93)

Variables	Results
Age (n/%) (Mean±SD) (Range) (Years)	(40.56±11.660) (17-65)
17-25 years old	9/9.68
26-35 years old	23/24.73
36-45 years old	27/29.04
46-55 years old	23/24.73
56-65 years old	11/11.82
Gender (n/%)	
Male	44/47.31
Female	49/52.69
Occupation (n/%)	
Government officer	13/13.98
Employee	13/13.98
Entrepreneur	15/16.13
Farmer	7/7.53
Trader	11/11.83
Student	3/3.23
Unemployed	11/11.83
Retired	2/2.15
Labor	18/19.34
Family Relationships (n/%)	
Parent	23/24.73
Spouse	30/32.26
Child	21/22.58
Sibling	19/20.43
Education (n/%)	
Elementary	8/8.60
Junior High	4/4.30
Senior High	43/46.24
University	38/40.9
Family's Knowledge (n/%)	
Good	60/64.5
Poor	33/35.5
Residence Location (n/%)	
Urban	50/53.8
Rural	43/46.2
Medication Adherence (n/%)	
Adherence	62/66.7
Non-Adherence	31/33.3

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Table 1. reveals that the majority of respondents had a mean age of 40.56 years with a standard deviation of 11.660, spanning from 17 to 65 years. Most respondents were female (52.69%), while males made up 47.31%. In terms of employment, most were laborers (19.34%), followed by government officers (13.98%), private sector employees (13.98%), entrepreneurs (16.13%), farmers (7.53%), traders (11.83%), students (3.23%), unemployed individuals (11.83%), and retirees (2.15%).

Regarding family relationships, parents constituted the majority (24.73%), followed by spouses (32.26%), children (22.58%), and siblings

(20.43%). Educationally, most respondents had a high school education (46.24%), followed by elementary school (8.60%), junior high school (4.30%), and university (40.9).

In terms of family knowledge, most families demonstrated good knowledge (64.5%), while a smaller portion had poor knowledge (35.5%). Concerning residence location, most respondents lived in urban areas (53.8%), and the rest lived in rural areas (46.2%). Finally, in terms of a medication adherence, the majority of respondents were adherence (66.7%), while a minority were non-adherence (33.3%).

Table 2. The Relationship between Residence Location, Medication Adherence and Family Knowledge

Variable	Medication Adherence		p-value	OR
	Non-Adherence (n=31)	Adherence (n=62)		
Residence Location (n/%)				
Urban	13/41.9	37/59.7	0.013	3.108
Rural	18/58.1	25/40.3		
Family Knowledge (n/%)				
Good	8/25.8	52/83.9	0.000	14.950
Poor	23/74.2	10/16.1		

Table 2. shows the results of the chi-square statistical test, which obtained a p value of 0.013 < 0.05. This indicates a significant relationship between residence location and medication compliance. The OR value is 3.108, meaning respondents who live within the city are 3.108 times more likely to comply with their medication regimen than respondents who live outside the city.

Of the 62 respondents with good knowledge, 8 respondents were not compliant with medical check-ups and 52 respondents were compliant with medical check-ups. Meanwhile, based on poor knowledge, the results showed that out of 33 respondents, 23 respondents with poor knowledge were not compliant with medical check-ups, and 10 respondents with poor knowledge were compliant with repeat check-ups.

DISCUSSION

Based on Table 2, the findings indicate that the majority of families at the Mental Health Outpatient

Clinic of Surakarta Mental Hospital have good knowledge about schizophrenia, accounting for 66.7%. Families with a good understanding of medication compliance can influence regular treatment control, preventing patient relapse (Nasir & Muhit, 2014).

There is a significant correlation between knowledge and behavior (p=0.003). The strength of this statistical relationship falls in the moderate range (0.4-<0.6), and the positive correlation means that as the independent variable increases, so does the dependent variable. There is a link between respondents' knowledge about glaucoma and their behavior towards it, including their awareness to have regular eye health check-ups (Fauzian, Rahmi, & Nugroho, 2016).

A study on the relationship between knowledge with medication compliance in schizophrenia patients at the Mental Health Outpatient Clinic of Jambi Mental Hospital in 2018 found that 58.3% of respondents were non-compliant with control.

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Among these, 50% had poor knowledge and 50% had good knowledge. Of those with poor knowledge, 97% were non-compliant, whereas 75% of those with good knowledge were compliant (Damayantie, Rasmimpong, & Elly, 2019).

Mental disorders are chronic conditions. The number of mental disorder patients at Surakarta Mental Hospital increases yearly, including both new patients and relapsed patients. Factors contributing to relapse include family support, availability and utilization of healthcare services, medication compliance, and environmental factors (Oktarisa, & Pratiwi, 2018).

A study found that 59 out of 323 (18.3%) patients relapsed over 12 months despite continuous LAT AP. Relapse risk factors include disease duration (increasing by 6.0% each year; $P=0.0003$) and country (Canada vs. US, increasing risk 4.7-fold; $P=0.0008$). Patients with a disease duration >10 vs. ≤ 5 years had the highest relapse risk, with a 4.4-fold increased risk ($P=0.0181$). These findings highlight that patients with more chronic illness have a higher relapse risk despite medication compliance, emphasizing the need for early intervention to prevent chronicity's adverse effects (Alphs, Nasrallah, Bossie, Fu, Gopal, Hough, & Turkoz, 2016).

Additionally, 53.1% of schizophrenia patients received support, 67.3% lived in Bengkulu city, and 63.3% adhered to the control schedule. There is a significant relationship between family support and control schedule compliance ($p = 0.016 < 0.05$), as well as between residence location and control schedule compliance ($p = 0.003 < 0.05$). However, there is no significant relationship between living within Bengkulu city and family support with compliance (Exact sig.(p) = 0.358), nor between living outside Bengkulu city and family support with compliance (Exact sig.(p) = 1.000) (Sari, Giena, & Effendi, 2018).

Schizophrenia is a serious mental disorder that results in psychotic behavior, difficulty processing information, interpersonal relationships, and problem-solving. Schizophrenia patients who do not adhere to regular medication can experience relapses. Data analysis results show a relationship between family support and medication adherence in schizophrenia patients (Ratnawati, 2016).

The chi-square statistical test results show a p

value of $0.000 < 0.05$, indicating a significant relationship between access to healthcare services and medication compliance. The study found an OR value of 8.643, meaning respondents with easy access are 8.643 times more likely to adhere to medication compared to those with difficult access (Maromon, 2020).

Bivariate analysis results show that the proportion of travel time to community-based health facilities in the fast category (≤ 8 minutes) is higher than in the slow category (> 8 minutes). Among respondents with incomplete immunization status, the highest proportion did not know about UKBM healthcare facilities. The test results between travel time to community-based health facilities and the completeness of basic immunization are as follows: longer travel time to community-based health facilities (> 8 minutes) has a 1.33 times higher risk of incomplete immunization compared to faster travel time (≤ 8 minutes) (Nainggolan, Hapsari, & Indrawati, 2016).

There is a relationship between knowledge (p -value = 0.000, OR = 0.138), economic level (p -value = 0.049, OR = 2.96), access to healthcare services (p -value = 0.013, OR = 3.49), beliefs (p -value = 0.001, OR = 5.58), environment (p -value = 0.000, OR = 13.19), and family motivation in preventing relapse in mental disorder patients. Families are encouraged to have monthly routine check-ups for patients as recommended by healthcare providers to prevent relapse and rehospitalization, and to help patients reintegrate into social environments (Pramana, Elita, & Dewi, 2017).

The distance from home to the hospital is also a factor in non-compliance with treatment. The greater the distance from home to the healthcare facility, the higher the risk of non-compliance with treatment. There were 49.4% of patients discontinued treatment, while 51.5% were non-compliant (Adeponle, Baduku, Adelekan, Suleiman, & Adeyemi, 2009).

Findings show that African American and white patients with bipolar disorder exhibit poor medication adherence, which they attribute to disease/treatment-related factors (denial of illness, physical side effects). However, patient-related factors (fear of addiction, medication as a symbol of illness) explain ethnic differences in perceived non-compliance factors. Differences in reasons for non-

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compliance relative to culturally biased self-perception can help explain non-compliance behavior in the African American community (Fleck, Keck, Corey, & Strakowski, 2005).

CONCLUSION

There is a significant relationship between family knowledge and medication compliance in schizophrenia patients, and no significant relationship between residence location and medication compliance.

SUGGESTION

For mental health services, it is recommended to provide information to the families of patients to promote follow-up visits for individuals with schizophrenia. Future researchers should explore additional factors affecting medication compliance in patients that were not covered in this study.

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