Determinant Factors Related to Relapse of Schizoprenic Patients at the Islamic Mental Hospital

MahyarSuara[1], Sandeep Poddar[2], Roy Rillera Marzo[3]

[1]STIKes Abdi Nusantara Jakarta, Jakarta, Indonesia
[2]Senior Research Director, Lincoln University College, Malaysia
[3]Deputy Dean, Faculty of Medicine, Asia Metropolitan University, Johor Bahru, Malaysia
e-mail:[1]suaramahyar@gmail.com, [2]sandeeppoddar@lincoln.edu.my, [3]rrmtexas@yahoo.com

ABSTRACT: Background: During the last century, there has been a high increase in health problems in the world, including Indonesia, one of it is mental health. The actual prevalence of mental health disorders worldwide remains poorly understood. Mental health is very much underreported, and under-diagnosed.
Aims
The purpose of this study was to identify factors associated with schizophrenia relapse of patients at the Islamic Mental Hospital in Jakarta, Indonesia.
Settings and Design
The research method with a quantitative approach was performed with a total sample comprisedof 150 respondents using primary data.
Material and Methods
The data collection method used was library research, field research (observation), and questionnaire research design through a cross-sectional approach.
Statistical Analysis
Univariate analysis process (frequency distribution) and Bivariate analysis with the Chi-square test and multi-variate with path analysis was used in this study
Results
Based on the results of the validity of the instrument, the variable of compliance for taking medication (X1), Stress variable (X2), Drug Abuse variable (X3), the Psychology variable (X4), the variable of Emotional Expression (X5), Relapse among schizophrenic patients (Y) was considered. The results revealed that the correlation of the adherence to the antipsychotic drugs consumption (X1), stress level (X2), and psychological response (X4) to the relapse in schizophrenia patients (Z) is acceptable, whereas the strongest or dominant correlation is the stress factor (X2).
Conclusions
The results of this study can provide a plan for schizophrenic patients in the country. Since schizophrenic patients need medication and treatment for a long time, the researchers recommend for the government to provide medical assistance.

Keywords: Schizophrenia, Relapse, patient, stress, psychological

1. INTRODUCTION

Over the last century, there has been a rise of mental health issues in the world which can also be seen in Indonesia. Numerous studies have revealed that mental health is a condition of subjective feelings of well-being, self-assessment which includes aspects of the self-concept of fitness, and self-control abilities (CDC, 2018). Several researches has investigated mental disorders in 2016. The International Health Metrics and Evaluation (IHME) revealed that 1.1 billion people worldwide suffer from mental disorders and rely on adaptive substances with the highest percentage in Greenland with 22.14%, Australia with 21.73%, the United States of America with 21.56%, and others from the Asian and Iranian regions with 19.93% of the population. Mental disorders have a higher prevalence every year. There are approximately 35 million people affected by depression, 60 million people with bipolar disorder, 21 million people with schizophrenia, and 47.5 million people with dementia (WHO, 2016). Schizophrenia is commonly diagnosed in late adolescence and early adulthood. The peak incidence is 15 to 25year sold for men and 25 to 35years old for women (Videbeck, 2018).

Recent evidence showed that there is an incidence of relapse in various countries, such as in Korea where the number of schizophrenic patients is 4,567. From this figure, there were 1,265 people (27.7%) people who experienced a relapse for two years (Lee, 2018). In Southwest Ethiopia, the prevalence rate of relapse among schizophrenic patients was 24.6% (Fikreyesus et al., 2016). The author found that in the People's Republic of China (PRC), 33.5% of patients in the first year, after being diagnosed with schizophrenia, experienced relapse (Xiao et al., 2015).

The World Health Organization (2017) placed mental health problems as a crucial health hazard that needs immediate attention. On the World Mental Health Day which is on 10 October 2018, the WHO took the theme "Youth and Mental Health in Changing the World". This event focuses on the mental health of young people. The global burden of illness and injury showed that the death of 16% of youth whose age ranges from 10 to 19 years old were due to suicide which includes severe mental disorders. Preventive efforts are needed for this age group because they are the future of the nation. If causes are known, it is good to have an intervention by family members. This allows adolescents not to be easily influenced by others, e.g. peers (Lander et al., 2013).

Mental disorders result toburdens for individuals, families, and countries. This can be proven by the existence of barriers in carrying out social roles and work which directly cause a decrease in productivity, pressure, or disability. According to data by the World Health Organization (WHO), mental illness accounts for 30% of the non-fatal disease burden and 10% of the overall disease burden worldwide, including death and disability. The cost of treatment for mental disorders is very expensive, reaching 3.4% annually (WHO, 2003).

It has been strongly proven that in Indonesia, the number of cases of mental disorders continues to increase with various factors such as biological, psychological, social, and population diversity which increase the burden on the country and which decreases human productivity in the long term (World Health Organization, 2017). The prevalence of severe mental disorders, which is schizophrenia in Indonesia, increased from 1.7 per 1,000 population in 2013 to 7 per 1,000 people in 2017. The prevalence of mental disorders is indicated by symptoms of depression that occur at the age of 15 years old, reaching up to 26.2 million people or 9.8% of Indonesia's population (World Health Organization, 2017).

2. RESEARCH METHODS

The study aimed to identify factors associated with schizophrenic patient relapse at the Islamic Mental Hospital in Jakarta Indonesia. In this study, quantitative method is used. Total sampling was used in the study. The sample comprised of 150 respondents. Data collection methods was observed through field research (observation). The research design used a cross-sectional approach with a Univariate analysis process (frequency distribution), Bivariate analysis with the Chi-square test (continuity of correction), and multi-variates through path analysis.

3. RESULTS

The findings of this study were initiated from the data where the study used primary data with interview techniques to patients who were treated at the Islamic Mental Hospital Jakarta. The sample comprised of 150 people. In this sample, 60% were men, while 40% were women.
From the sample, 56% of the respondents hold an educational background of secondary education, 24% hold an educational level of high education, and 20% hold an educational level of elementary education.
Based on the frequency distribution, 82% of the population was comprised of participants whose age ranged from 18 to 65 years old, 10% of the participants' age ranged from 66 to 79 years old, and 8% of the participants' age ranged from 0 to 17 years old. The marital status of the respondents shows that out of 150 people, 50% of the respondents were married, and 50% of the respondents were not married. It was found out that out of 150 people, 48% of the respondents' monthly expenses for living in the hospital is greater than IDR 500,000, 20% of the respondents' monthly expenses for living in the hospital ranges from IDR 100,000-250,000, another 20% of the respondents' monthly expenses for living in the hospital ranges from IDR 50,000-100,000, and 18% of the respondents' monthly expenses range from IDR 250,000-500,000.

Table1. Respondents' Demographic Data

Description	Types	Total	Percentage (%)
Gender	1. Male	90	60.0
	2. Female	60	40.0
	Total	**150**	**100**
Education	3. Elementary	30	20.0
	4. Secondary	84	56.0
	5. High	36	24,0
	Total	**150**	**100**
Age	1. 0-17year-old	12	8.0
	2. 18-65year-old	123	82.0
	3. 66-79year-old	15	10.0
	4. > 79year-old	0	0
	Total	**150**	**100**
Marriage Status	1. Married	75	50.0
	2. Not Married	75	50.0
	Total	**150**	**100**
Monthly Expenses for	1. >IDR 500,000	72	48.0

Living	2. IDR 250.000 - 500,000	18	12.0
	3. IDR 100,000- 250.000 4. IDR 50,000-100,000	30	20.0
		30	20.0
	Total	**150**	**100**
Period of Suffering from Schizophrenia	1. > 1 year	30	20.0
	2. ≤ 1 year	120	80.0
	Total	**150**	**100**
Source: Primary Data (Processed)			

Validity Test

Based on the results of the validity test for the instrument of adherence variable under drug compliance (X1), S-CVI/UA was at 0.79 which indicates acceptability. For the Stress Level variable (X2), S-CVI/UA was at 0.86 which indicates acceptability. For the drug abuse variable (X3), S-CVI/UA was at 0.70 which indicates acceptability. The Psychological value (X4) was at 0.70 which indicates acceptability. The Emotional Expression value (X5) was at 0.78 which indicates acceptability. For the variable of relapse for schizophrenic patients, (Y) S-CVI/UA was at 0.75 which indicates acceptability.

Reliability Test

The results of data processing with SPSS_24.00 show that all of the independent variables which include Drug Compliance Variable (X1), Stress Level Variable (X2), Drug abuse Variable (X3), Psychological Variable (X4), and Emotional Expression Variable (X5) have Cronbach alpha value>r table (0.50). It can be concluded that all questions on the research instrument in this study are reliable which indicates that questions in this study produce consistent answers from time to time, and each of these questions can be used in this study. The results of the processing of the reliability test with SPSS_24.00 are as shown in Table 2 below.

Table 2. Reliability Test of Questionnaire

No	Variables	Cronbach's Alpha	Notes
1	Drug Compliance (X1)	0.918	Reliable
2	Stress Level (X2)	0.906	Reliable
3	Substance Use (X3)	0.841	Reliable
4	Psychology (X4)	0.786	Reliable
5	Emotional Expression (X5)	0.920	Reliable
6	Relapse (Y)	0.941	Reliable

Based on table 2 above, it can be seen that each variable has a Cronbach Alpha of more than 0.50 (α> 50). The results of the instrument reliability test in the table show>0.50.

Univariate Descriptive Analysis
Distribution of Independent and Dependent Variables of Patients with Mental Disorders at the Islamic Mental Hospital, Jakarta

The researcher found the results as shown in Table 3 below where the average compliance to the consumption of antipsychotic drugs was at 42.01 times (95% CI: 40.36-43.67) with a standard deviation of 10.271. The lowest compliance was 22 times, and the highest adherence was 60 times. From the results of interval estimation, it can be concluded that 95% of the time is believed that the mean adherence of Schizophrenic patients was between 40.36 and 43.67 times. The average stress level was 44.10 times (95% CI: 42.86-45.34) with a standard deviation of 7.703. The lowest stress level was 28 times and the highest compliance was 58 times. From the results of interval estimation, it can be concluded that 95% of the study respondents is believed that the average stress level among Schizophrenic patients was between 42.86 and 45.34 times. The average psychological response in this study was 33.94 times (95% CI: 33.94-35.03) with a standard deviation of 3.361. The psychological response was 24 times, and the highest compliance was 47 times. The result of the interval calculation shows that 95% of the mean psychological response of Schizophrenic patients was between 33.94 and 35.03 times. The mean substance use was 21.34 times (95% CI: 20.00-21.34) with a standard deviation of 4.146. The lowest substance use was 14 times and the highest abuse was 32 times. The result of interval estimation shows that 95% believed that the mean substance use among Schizophrenic patients was between 20.00 and 21.34 times. The average emotional response was 42.53 times (95% CI: 41.73-43.34) with a standard deviation of 4.987. The lowest emotional response was 25 times, and the highest emotional response was 50 times. The result of interval estimation shows that 95% of the study group believed that the mean Emotional Response of Schizophrenic patients was between 41.73 to 43.34 times. The mean of Relapse Symptoms was 40 times (95% CI 39.17-41.06) with a standard deviation of 5.86. The lowest relapse was 30 times, and the highest Relapse was 50 times. From the results of the interval calculation, it can be concluded that 95% of the respondents believed that the average relapse of Schizophrenic patients was between 39.17 and 41.06 times.

Table 3. Distribution of Independent and Dependent Variables of Patients with Mental Disorders at the Islamic Mental Hospital, Jakarta

Variables	Mean	SD	Min-Max	95% CI
Drug Consumption Compliance	42.01	10.271	22-60	40.36-43.67
Stress Level	44.10	7.703	28-58	42.86-45.34
Psychological Response	33.94	3.361	24-47	33.94-35.03
Substance Use	21.34	4.146	14-32	20.00-21.34
Emotional Response	42.53	4.987	25-50	41.73-43.34
Relapse	40	5.86	30-50	39.17-41.06

Distribution of Respondents in the Consumption of Antipsychotic Drug Compliance in the Islamic Mental Hospital, Jakarta
The proportion of respondents who were *very heavily non-compliant* in taking anti-psychotic drugs was 55.3%, and heavily non-compliant was at 38%, while those who were moderately

non-compliant were at 6.7%. Therefore, it can be concluded that almost all respondents were non-compliant in the consumption of antipsychotic drugs with the greatest presentation of 55.3% who were very severely non-compliant, as can be seen in the table below:

Table 4. Distribution of Respondents in the Consumption of Antipsychotic Drug Compliance in the Islamic Mental Hospital, Jakarta

Che Consumption of Anti-Psychotic Drug Compliance	Total	Percentage
Very Heavily Non-Compliant	83	55.3
Heavily Non-Compliant	57	38.0
Moderately Non-Compliant	10	6.7
Total	150	100

Distribution of Respondents by Stress Levels in Islamic Mental Hospital, Jakarta
As seen from the stress level among patients with mental health issue, the results showed a very heavy stress level of 70.7%, while 29.3% for heavy stress. It can be concluded that all patients in the mental hospital who are respondents were in a state of heavy stress, even the highest was very heavy as can be seen in the table below:

Table 5. Distribution of Respondents by Stress Levels in Islamic Mental Hospital, Jakarta

Stress Level	Total	Percentage (%)
Very Heavy	106	70.7
Heavy	44	29.3
Total	150	100

Distribution of Respondents in Drug Abuse in the Islamic Mental Hospital, Jakarta
The description of patients or respondents in relation with drug abuse shows that 56.7% of them always abused drugs, 38% often abused drugs, and 5.3% rarely abused drugs. The distribution can be seen in the table below:

Table 6. Distribution of Respondents in Drug Abuse in the Islamic Mental Hospital, Jakarta

Drug Abuse	Total	Percentage (%)
Always	8	5.3
Often	57	38
Rarely	85	56.7
Total	150	100

Distribution of Respondents in the Psychological Response at the Islamic Mental Hospital, Jakarta

The description of patients or respondents for psychological response shows that 5.3% of the psychological response was bad, 4.7% of the psychological response was moderate and 90% of the psychological response was normal, and the distribution can be seen in the table below.

Table 7. Distribution of Respondents in the Psychological Response at the Islamic Mental Hospital, Jakarta

Psychological Response	Total	Percentage (%)
Bad	8	5.3
Moderate	7	4.7
Normal	135	90
Total	150	100

Distribution of Respondents in Emotional Response at Islamic Mental Hospital, Jakarta

The description of the patients or respondents in emotional response shows 29.3% emotional response was bad, 1.3% emotional response was moderate, and 69.3% of emotional response was normal, and the distribution can be seen in the table below.

Table 8. Distribution of Respondents in Emotional Response at Islamic Mental Hospital, Jakarta

Emotional Response	Total	Percentage
Bad	44	29.3
Moderate	2	1.3
Normal	104	69.3
Total	150	100

Distribution of Respondents in Symptoms of Relapse in Islamic Mental Hospital, Jakarta

The description of patients or respondents in relation with symptoms of relapse showed that 58% showed a frequent relapse and 48% rarely showed symptoms of relapse. The distribution can be seen in the table below:

Table 9. Distribution of Respondents in Symptoms of Relapse in Islamic Mental Hospital, Jakarta

Relapse Symptoms	Total	Percentage
Often	87	58
Rarely	63	48
Total	150	100

Univariate Descriptive Analysis
Bivariate analysis was used in this study which aims to determine factors associated with the relapse of schizophrenic patients. The test used was chi-square test. This test was carried out to determine whether there is a relationship between the independent variables (compliance to the consumption of anti-psychotic drugs, stress level, drug abuse, psychological responses, and emotional responses with the dependent variable of relapse symptoms), as can be seen in Table 10 below.

Table 10. The relationship Between the Independent Variables with the Dependent Variable of Relapse of Schizophrenic patients

Variable Independents	Relapse				P Value
	Often		Rarely		
	N	%	N	%	
Drug Consumption Compliance -Heavily Non-Compliant -Heavily Non-Compliant - Moderately Non-Compliant	83 0 4	100.0 0.0 40.0	0 57 6	0.0 100.0 60.0	**0.01**
Stress Level -Very Heavy - Heavy	87 0	82.1 0.0	19 44	17.9 100.0	**0.00**

Drug Abuse					
Always	2	25.0	6	75.0	
Often	0	0.0	57	100.0	
Rarely	85	100.0	0	0.0	**0.130**
Psychological Response					
Bad	72	53.3	63	46.7	
Moderate	7	100.0	0	0.0	**0.007**
Normal	8	100.0	0	0.0	
Emotional Response	44	100.0	0	0.0	
Bad	2	100.0	0	0.0	**0.061**
Moderate	41	39.4	63	60.6	
Normal					

4. DISCUSSION

From the above analysis, the significance value of X1 is 0.01 <0.05. Hence, it can be concluded that there is a direct, significant relationship between X1 and Z. Analysis of the effect of X2 on Z: From the above analysis, the X2 significance value is 0.00 <0.05. Hence, it can be concluded that there is a direct, significant relationship between X2 and Z. Analysis of the influence of X3 on Z: From the above analysis, the X3 significance value is 0.130> 0.05. Hence, it can be concluded that there is no direct relationship. significant X3 on Z.

Analysis of the effect of X4 on Z: From the above analysis, the significance value of X4 is 0.007> 0.05. Hence, it can be concluded that there is a direct, significant relationship between X4 and Z. Analysis of the effect of X5 on Z: From the above analysis, the significance value is obtained. X5 is 0.061>0.05. Hence, it can be concluded that there is no direct, significant of X5 toward Z.

Based on a series of discussions or results above, we can draw the conclusion that the hypothesis of "There is a relationship between compliance to anti-psychotic drug consumption (X1) and Stress Level (X2) and psychological response (X4) to Relapse in Schizophrenia patients (Z) is accepted."

Evidence from this study suggests that coping with schizophrenia is a major adjustment for patients. Therefore, the nurse must help patients to deal with illness and health through becoming independent of the patient, especially the factors that can cause a relapse. (Videbeck, 2018) stated that factors that increase relapse in clients are compliant with taking medication according to the program, consuming alcohol and other substances, increasing client stress levels, and client psychological responses and emotional reactions.

However, a number of studies have shown that there are significant differences with the research results (Ambari, 2010). There was a difference among patients who were non-adherent toward taking medication which was the dominant factor with the occurrence of relapse with a p-value of 0.00 (p-value <0.05). The result is also different from a study by Kazadi et al., (2008) where 217 schizophrenic patients in outpatient clinics showed a dominant factor in the increased risk of relapse which included co-morbid mood of medication compliance.

The difference that occurred from the results of this study was because patients as the object of research were from a family background that was not harmonious. Further, these patients have lack of functioning of the family role in accordance with the concept put forward by Townsend (2009). From the theory, it was found out that the relationship between children and parents who do not work harmoniously may cause a severe psychological response which, eventually, may lead to schizophrenia. In addition, the characteristics of the object of research other than the less functioning family, as well as less effective individual coping (Fontaine, 2009). The triggering factors for individuals experiencing schizophrenia maybe caused by tolerance for ineffective, impulsive individual coping, or clients who behave towards maladaptive low self-esteem, violent behavior and misperception of stimuli as seen among clients with hallucinations, aggressive behavior, or violent behavior which may because of feelings of anger, anxiety, guilt, and suspicion.

5. CONCLUSIONS

This study aimed to find answers to formulate research questions, namely the relapse level of schizophrenic patients in the Islamic Mental Hospital in Jakarta which includes factors associated with the occurrence of relapse among schizophrenic patients and the dominant factors that influence the incidence of relapse in patients with schizophrenia. The results of this study, however, make an important contribution to government as supported by the literature, that schizophrenic is a mental disorder among individuals who are perceived as a burden to the family and the government. Therefore, schizophrenia makes human resources unproductive. Schizophrenic patients require medication and treatment for a long time. Thus, the researcher recommends the government to craft and to implement a policy for a medical assistance among schizophrenic patients. Moreover, the researcher suggests for the government to strengthen the support for integrated services for schizophrenia patients after their hospital admission in relation with their condition.

6. REFERENCES

[1]   Ambari, P. K. (2010). Hubungan antara dukungan keluarga dengan keberfungsian sosial pada pasien skizofrenia pasca perawatan di rumah sakit ringkasan.

[2]   Kazadi, N. J. B., Moosa, M. Y. H., &Jeenah, F. Y. (2008). Factors associated with relapse in schizophrenia, 14(2).

[3]   Townsend, M. C. (2009). Psychiatric Mental Health Nursing: Concepts of care in evidence-based practice. Philadelphia: Davis Company.

[4]   Videbeck, S. L. (2018). Psychiatric Mental Health Nursing (7th ed.). Lippincott Williams & Wilkins, USA

[5]   World Health Organization (2003). Investing in mental health. This publication was produced by the Department of Mental Health and Substance Dependence, Noncommunicable Diseases and Mental Health, World Health Organization, Geneva.

[6]   World Health Organization. (2001). The World Health Report 2001: Mental health: new understanding, new hope. World Health Organization.

[7]   Centers for Disease Control and Prevention (CDC) (2018). Well-being concepts [Internet]. USA: CDC.

[8]   World Health Organization. 2016. Fact Sheet on Mental Disorders. Available:http://www.who.int/mediacentre/factsheets/fs396/en/(accessed 1st June, 2016).

[9]   Lee, S. U., Soh, M., Ryu, V., Kim, C. E., Park, S., Roh, S., ... & Choi, S. (2018). Risk factors for relapse in patients with first-episode schizophrenia: analysis of the Health Insurance Review and Assessment Service data from 2011 to 2015. *International journal of mental health systems*, *12*(1), 9.

[10] Fikreyesus, M., Soboka, M., & Feyissa, G. T. (2016). Psychotic relapse and associated factors among patients attending health services in Southwest Ethiopia: a cross-sectional study. *BMC psychiatry*, *16*(1), 354. https://doi.org/10.1186/s12888-016-1076-2

[11] World Health Organization (2017). *Depression and other common mental disorders: global health estimates* (No. WHO/MSD/MER/2017.2). World Health Organization.

[12] Lander, L., Howsare, J., & Byrne, M. (2013). The impact of substance use disorders on families and children: from theory to practice. *Social work in public health*, *28*(3-4), 194–205. https://doi.org/10.1080/19371918.2013.759005

[13] World Health Organization (2017). *Depression and other common mental disorders: global health estimates* (No. WHO/MSD/MER/2017.2). World Health Organization.

[14] Fontaine, K. L. (2009). *Mental health nursing*. Prentice Hall.