DETERMINANTS OF CAUSES OF COMPLIANCE WITH ISCHEMIC STROKE TREATMENT PROGRAM AT THE OUTPATIENT UNIT AT SK LERIK HOSPITAL, KUPANG CITY

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ABSTRACT

Compliance describes a specific goal adherence to the treatment program, especially for patients with chronic diseases, is important. Ischemic stroke is a degenerative disease that causes death. Based on data on the number of ischemic stroke patients, there were 1117 patients during January 2021 – December 2021. This research aims to find out the causes that influence the regularity of participating in the Outpatient Treatment Program at the SK Lerik Hospital, Kupang.

Study This is study qualitative with design crosectional . Determination of the sample in this study used total sampling of the average number of patient visits over 3 months. The number of samples taken was 63 patients. The variables examined in this study were age, gender, duration of illness, frequency of taking medication, income, trust in health workers, family support, self-efficacy and compliance with the treatment program.

Based on the results of multivariate analysis using logistic regression tests, the variables that influence compliance with the coronation program for ischemic stroke patients are income with a p-value of 0.003, trust in health workers with a p-value of 0.004, family support with a p-value of 0.025, and self-efficacy with p-value 0.032.

The conclusion is that what does not influence the compliance of ischemic stroke patients with the treatment program is that age, gender, frequency of taking medication, and duration of illness influence compliance with the treatment program of ischemic stroke patients, economic income, while trust in health workers, family support, and self-efficacy.

Based on this research, it is recommended for families to help patients comply with existing treatment programs, as well as for health workers to build relationships of mutual trust and effective communication with patients to increase patient compliance with the treatment program provided.

Key words: Compliance with treatment programs, ischemic stroke

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Introduction.

Stroke occupies first place as the deadliest disease in Indonesia (WHO, 2020). Based on the latest data from WHO (2020), Indonesia is the country with the highest stroke death rate, namely 11th (WHO, 2020). Indonesia ranks first as the country with the most stroke cases in Asia. Based on WHO (2020), 357,183 deaths occurred due to stroke in Indonesia. Based on data from the World Stroke Organization in 2021, the number of stroke incidents in the age range 15 to <70 years is 12.2 million and approximately 62% of these stroke incidents are ischemic strokes (WHO, 2021). There are approximately 7.6 million new cases of ischemic stroke . Based on the results of the 2018 riskesdas in NTT province, there were 26.59% of 28,430 stroke patients who did not undergo re-examination after having a stroke based on age group, gender, education, occupation and place of residence.

There were 1137 stroke cases at SK Lerik Regional Hospital, Kupang City during 2021 . Meanwhile, only 92% or approximately 104 patients made return visits after being discharged from the hospital. The number of outpatients in February – April 2021 was 98 patients. Visits during December 2021 were 54 people. Visits during January 2022 were 79 people. Visits during February 2022 were 80 people. Visits during March 1 – March 13 202 2 were 18 people. The average visit during December 202 1 – March 202 2 was 55.25 people. The population in this study was 55 people.

Global stroke patient compliance with taking medication is very low with a non-compliance rate of 33%-50% from 135,000 respondents, even lower for stroke patients in Asia (Fan et al., 2021). Non-compliance among Asian stroke patients was 34.7%-81.8% of the 77,000 respondents.

Patients with high non-adherence to treatment have a higher risk of stroke recurrence than patients with low adherence to treatment (Yeo et al., 2020) . Based on research, (Shani et al., 2021)the factors that can influence patient compliance in participating in a treatment program are income, expensive drug prices, communication with health workers, trust in health workers, age, gender, and trust in the effects of drugs. Objective This research is to find out the determinants of internal ischemic stroke Compliance with the outpatient treatment program at SK Lerik Regional Hospital, Kupang City

METHOD

Design research used is *cross-sectional* . Study *cross-sectional* is type research that emphasizes time measurement or observation of independent variable data and dependent once on One moment This. The population is 54 people. Visits during January 2021 were 79 people. Visits during February 2022 were 80 people. Visits during March 1 – March 13 2023 were 18 people. The average visit during December 2021 – March 2022 was 55.25 people. The population in this study was 55 people. The number of samples taken in this study was the average number of visits during the last 4 months, namely 55 people. Sampling technique *purposive sampling* with inclusion criteria **;** Aged 36 – 65 years , are patients with a medical diagnosis of ischemic stroke without complications. Exclusion criteria are Not able to communicate independently, Not able to read the questionnaire, Not willing to be a respondent . Time and place The research was conducted at the SK Lerik Regional General Hospital, Kupang City in May-June 2021 . The analysis of this research is that the chi square test cannot determine the risk size of the existing variables. Therefore, to determine the degree of variable, Relative Risk (RR) and *Odds Ratio* (OR) measurements are needed. The Chi Square test shows no relationship between the dependent variable and the independent variable.

If the p-value < α (0.05), means there is a relationship between the dependent variable and the independent variable. The *Odds Ratio* requirements according to Saryono (2013) in (Kurniadi & Nurrahmani, 2014) are as follows: Odds ratio result = 1, meaning the factor studied is a protective factor , Odds ratio result > 1, meaning the factor studied is a risk factor , Odds ratio result < 1, meaning the factor studied is not a risk factor.

RESULTS AND DISCUSSION

4.1. Research result

4.1.1. Description of research location

The location of this research is SKLerik Regional Hospital, Kupang City. RSUD SK Lerik Kupang City is a regional general hospital managed by the Kupang city government and is a type C hospital as a first level referral facility for the people of Kupang city and its surroundings. Outpatients at SK Lerik Regional Hospital, Kupang City are provided with services through general polyclinics and specialist polyclinics according to a predetermined schedule.

The research was carried out by researchers at the outpatient clinic, specifically at the neurology clinic. Neurology Polyclinic is one of the polyclinics at SK Lerik Regional Hospital, Kupang City. The research was carried out from Monday to Friday, that is, every day the polyneurology service

was in accordance with the existing schedule. The research was carried out for 3 weeks, namely from 2 to 1 May 2021 – 19 Dec 2021 .

4.1.2. Univariate analysis results

Univariate analysis was carried out to see the frequency distribution of each variable, namely the dependent variable, namely compliance with the ischemic stroke treatment program and the independent variables duration of illness, frequency of taking medication, age, gender, self-esteem, trust in health workers, family support, and income. Based on table 3 shows that the number of ischemic stroke patients aged 56-65 years is 26 people (41.3%) of the total respondents. There were 23 ischemic stroke outpatients aged 46-55 years (36.5%) and 14 outpatients aged 36-45 years (22.2%)

4.1.3. Multivariate analysis results

Variables that have been subjected to bivariate analysis using the chi square test have the following details:

Table 1Summary of bivariate test results for variables Determinants :

No	Variable	P-value
1	Gender	0.582
2	Age	0.350
3	Income	0.003
4	Frequency of taking medication	0.919
5	Self-efficacy	0025
6	Family support	0.032
7	Trust in health workers	0.004
8	Long illness	0.996

Based on the results of bivariate analysis, it was found that the variables dterminants that showed a relationship with compliance with the treatment program for ischemic stroke outpatients at SKLerik Regional Hospital, Kupang City were income, self-efficacy, family support and trust in health workers.

Table 2Variables related to the level of compliance with taking medication

	B	Wald	Sig.	Exp(B)	95% CIfor EXP(B)	
					Lower	Upper
Income	1,325	5,451	,020	3,762	1,237	11,439
GSE	1,529	4,038	,044	4,614	1,038	20,503
M.O.S	,272	,277	,599	1,313	,477	3,616
Tips	,214	,065	,798	1,239	,240	6,399
Constant	-9,238	7,694	,006	,000		

Discussion

Factors influencing patient compliance in following the treatment program for outpatients with ischemic stroke at SK Lerik Regional Hospital, Kupang City . The influence of income on patient compliance with the treatment program for outpatients with ischemic stroke at SK Lerik Regional Hospital, Kupang City . Patient compliance with treatment programs is greatly influenced by income or economic factors. Based on research, (Shani et al., 2021)respondents with lower incomes have lower levels of compliance with treatment programs. This is because the drugs prescribed are expensive. Patient compliance with low income levels is also greatly influenced by the low level of literacy provided by health workers.

Other research such as n (Gangwani et al., 2021) concluded that self-efficacy factors can increase motivation to improve and increase participation in rehabilitation. Self-efficacy and motivation also determine how a patient can face various problems and challenges during the rehabilitation and treatment program. Self-esteem or self-efficacy is a person's ability to carry out a specific task or action in achieving a certain goal (Appalasamy et al., 2019) . Self-efficacy requires self-confidence and high self-control which helps in carrying out plans as desired. Self-efficacy determines how long and how much effort is used to face a challenge. The greater the self-efficacy, the longer the business will last.

According to (Wardhani & Martini, 2015) which shows that good family support increases the compliance of stroke patients in undergoing rehabilitation, taking medication, control or therapy. Research (Ika Nur Rohmah & Maharani Fadjri, 2022) shows that family support and social support and mentoring from the family can increase compliance with treatment for stroke patients. The greater the social support received by the patient, the higher the level of patient compliance.

1. The influence of trust in health workers on patient compliance with the treatment program is very determining. The quality of the patient's relationship with medical personnel and family support are interpersonal factors in treatment compliance. Good and effective communication with medical staff increases patient engagement in the treatment program. Trust in health workers results in increased compliance with treatment programs but this varies according to the respondent's income level (Fan et al., 2021).

Trust in health workers is a situation where patients accept their illness and believe that health workers will provide the best treatment for their illness (Fan et al., 2021) . This is related to the understanding provided by health workers regarding the disease and treatment received by a patient. Patients who do not understand the benefits and goals of the treatment they receive. Good communication will reduce the risk of negative beliefs about health workers and the treatment they receive and increase treatment compliance (Cheiloudaki & Alexopoulos, 2019) . Based on the characteristics of the respondents with the most ischemic strokes, the patients were male. Gender is one of the risk factors that influences the incidence of stroke that cannot be changed. Male patients are said to have a greater risk of stroke than women. Research (Wardhani & Martini, 2015) shows that there is a weak or less significant relationship between the respondent's gender and compliance with the treatment program after stroke. Gender is not a factor that always influences an individual's compliance because there are several studies that do not have consistent results regarding this gender factor (Rachmania et al., 2020). The gender that is often associated with compliance is the male gender which has a low level of compliance (Cheiloudaki & Alexopoulos, 2019) . As we age, the function of the blood vessel system decreases, resulting in .

The influence of length of illness on patient compliance with the treatment program for outpatients with ischemic stroke at SK Lerik Regional Hospital, Kupang City This research shows that the length of illness does not have a significant influence on patient compliance with the treatment program for outpatients with ischemic stroke at SK Lerik Regional Hospital, Kupang City. The results of this study are different from research from (Kim et al., 2020) which shows that patients those with comorbidities and who have had the disease for a long time have higher compliance with the treatment program because the patient has gotten used to taking medication continuously. The differences in research results occurred due to differences in the inclusion criteria used by researchers. This study used inclusion criteria where existing ischemic stroke patients had a medical diagnosis of ischemic stroke without further complications. Therefore, there are differences in the results of existing research. Patients with a lower frequency of taking medication such as once a day have a higher level of compliance compared to patients who have a frequency of 2x a day, 3x a day and 4x a day (Coleman et al., 2012) . Research carried out by (Kim et al., 2020) was conducted in South Korea where health facilities packaged several patient medications in different packages according to the prescribed medication-taking times rather than giving patients medications individually as was done where this research was conducted.

Conclusion

Conclusion of this study is that the variables that do not affect the compliance of ischemic stroke patients with the treatment program are age, gender, frequency of taking medication, and duration of illness. Based on this study, it is recommended that families help patients comply with existing treatment programs, and health workers build trusting relationships and effective communication with patients to improve patient compliance with the treatment program provided.

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1. Characteristics by age

Table 3Characteristics of ischemic stroke patients based on age Period May-June 202 2

		Frequency	Percent
Valid	36-45	14	22.2
	46-55	23	36.5
	56-65	26	41.3
	Total	63	100.0

Table 4Characteristics of ischemic stroke patients based on gender Period May-June 2023

		Frequency	Percent
Valid	Man	33	52.4
	Woman	30	47.6
	Total	63	100.0

Table 5Frequency of taking medication for ischemic stroke patients May-June Period 20 22

		Frequency	Percent
Valid	1x a day	3	4.8
	2x a day	38	60.3
	3x a day	16	25.4
	>3x a day	6	9.5
	Total	63	100.0

Table 6Family support for ischemic stroke patients May-June 202 2

		Frequency	Percent
Valid	No support	0	0
	not enough support	1	1.6
	Enough support	16	25.4
	Support	30	47.6
	very support	16	25.4
	Total	63	100.0

Table 7Compliance with taking medication for ischemic stroke patients for the period May-June 202 2

MARS			
		Frequency	Percent
Valid	No obedient	1	1.6
	not enough obedient	1	1.6
	Enough obedient	7	11.1
	Obedient	23	36.5
	very obedient	31	49.2
	Total	63	100.0

Table 8Relationship between gender and medication compliance in ischemic stroke patients May-June period 202 2

		Gender		Total	Asymp . Sig
		Man	Woman		
MARS	No obedient	0	1	1	0.582
	not enough obedient	0	1	1	
	Enough obedient	3	4	7	
	obedient	12	11	23	
	very obedient	18	13	31	
Total		33	30	63	

Table 9Relationship between income and medication compliance in ischemic stroke patients for the period May-June 202 2

		Income			Total	Asymp . Sig
		1-3 million / month	3-6 million / month	> 6 million / month		
MARS	No obedient	1	0	0	1	0.003
	not enough obedient	1	0	0	1	
	Enough obedient	7	0	0	7	
	obedient	11	12	0	23	
	very obedient	6	18	7	31	
Total		26	30	7	63	

Table 10Relationship between Frequency of Taking Medication and Compliance with Medication in Ischemic Stroke Patients May-June Period 202 2

		Frequency drink drug				Total	Asymp . sig
		1x a day	2x a day	3x a day	>3x a day		
MARS	No obedient	0	1	0	0	1	0.919
	not enough obedient	0	1	0	0	1	
	Enough obedient	1	4	1	1	7	
	Obedient	0	15	7	1	23	

	very obedient	2	17	8	4	31	
Total		3	38	16	6	63	

Table 11Relationship between trust in health workers and adherence to medication in ischemic stroke patients May-June period 202 2

		Trust to health workers		Total	Asymp . sig
		believe	very believe		
MARS	No obedient	1	0	1	0.004
	not enough obedient	1	0	1	
	Enough obedient	7	0	7	
	obedient	19	4	23	
	very obedient	13	18	31	
Total		41	22	63	

Table 12Relationship between family support and medication adherence in ischemic stroke patients May-June Period 202 2

		M.O.S				Total	Asymp . sig
		2	3	4	5		
MARS	No obedient	0	0	0	1	1	0.032
	not enough obedient	0	0	1	0	1	
	Enough obedient	1	2	3	1	7	
	obedient	0	7	15	1	23	
	very obedient	0	7	11	13	31	
Total		1	16	30	16	63	

TBEL 11. The relationship between self-esteem and adherence to medication in ischemic stroke patients .

	GSE		Total	Asymp . sig
	efficacy normal self	efficacy self tall		
	0	1	1	
	1	0	1	0.025
	5	2	7	
	18	5	23	
	12	19	31	
Total	36	27	63	

Table 13Relationship between self-efficacy and medication adherence in ischemic stroke patients May-June Period 202 2

Table 14Multivariate test results

No	Variable	P-value
1	Gender	0.582
2	Age	0.350
3	Income	0.003
4	Frequency of taking medication	0.919
5	Self-efficacy	0025
6	Family support	0.032
7	Trust in health workers	0.004
8	Long illness	0.996