

FACTORS ASSOCIATED WITH MEDICATION ADHERENCE AMONG ISCHEMIC STROKE PATIENTS AT BAKTI TIMAH HOSPITAL, PANGKAL PINANG, IN 2025.

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Abstract

Ischemic stroke is the main cause of death in Indonesia, including in the Bangka Belitung area. The level of medication adherence in ischemic stroke patients is still at a low level, which has an impact on the increased risk of recurrence and death. This study aims to determine factors related to medication adherence in ischemic stroke patients, especially at Bakti Timah Pangkalpinang Hospital. The factors studied included knowledge, attitudes, and family support for patients. This study uses a quantitative method with a cross-sectional design. with a sample of 88 respondents were taken from ischemic stroke patients who underwent outpatient treatment at Bakti Timah Pangkalpinang Hospital. The sampling technique used is purposive sampling. Data collection was carried out using a validated questionnaire, namely MMAS-8 to measure medication adherence, as well as a special instrument to measure variables of knowledge, attitudes, and family support. As well as data analysis using the Chi Square test. The results showed that there was a significant relationship between knowledge ($p=0.000$), attitude ($p=0.000$), and family support ($p=0.000$) and medication adherence in ischemic stroke patients. Knowledge, attitude and family support are the factors that most influence the patient's compliance in undergoing treatment. The results of this study can help in developing more effective intervention strategies to improve the quality of life of ischemic stroke patients. The conclusion that can be drawn from this study is that knowledge, attitudes, and family support have a meaningful relationship with the level of compliance of ischemic stroke patients in taking medication. The suggestion from this study is the need for continuous educational interventions to patients and discharges as well as the increasing role of health workers in providing support and monitoring to ischemic stroke patients.

Keywords: Medication Adherence, Ischemic Stroke, Knowledge, Attitude, Family Support

INTRODUCTION

The World Health Organization (WHO) defines a stroke as a neurological disorder that lasts at least 24 hours and can be fatal. Strokes are caused by a blood vessel in the brain bursting or becoming blocked, blocking blood and oxygen flow to a part of the brain, resulting in the death of cells or tissue in that area (Manan et al., 2022). According to the World Health Organization (WHO), there are more than 12 million cases of stroke worldwide, resulting in more than 6 million deaths. Most deaths are caused by hypertension, and an estimated 16% of deaths are also caused by high blood glucose levels (WHO, 2021). Data from the American Heart Association (AHO) shows that stroke cases continue to increase. Of all recorded cases, 87% are ischemic strokes, 20% are intracerebral hemorrhagic, and 5% are recurrent strokes. In 2022, the WHO estimates there will be 13.7 million cases of stroke and approximately 5.5 million deaths, with 60% of cases occurring in people over 70 years of age. According to the World Health Organization (WHO), by 2023, stroke will be the third leading cause of death in developing countries after coronary heart disease and cancer. Each year, approximately 10 million people experience a stroke, with 5 million dying and 5 million experiencing permanent disability. High-income countries have higher stroke morbidity rates than low-income countries. In 2023, the World Stroke Organization (WSO) reported that 12.2 million people experienced stroke worldwide, with 7.6 million new cases of ischemic stroke. WHO accounts for more than 40% of global stroke deaths. In Indonesia, hemorrhagic stroke patients increased by 14.1% from January 2021 to December 2023, with approximately 27,000 cases involving 25,400 individuals. Data obtained from Bakti Timah Hospital in Pangkalpinang shows that in 2020, the number of ischemic stroke sufferers was 307, in 2021, there were 224. In 2022, the number of ischemic stroke sufferers was 294. In 2023, the number of ischemic stroke sufferers was 393, and in 2024, the number of ischemic stroke sufferers was 399 (Rekmed RSBT, 2024). Based on research conducted by Nuraisyah et al. (2021), it was found that the majority of respondents exhibited positive attitudes among 153

respondents. The coefficient of determination test showed a value of 0.271, indicating that the attitude variable had a 27.1% influence on medication adherence, with statistical significance ($p = 0.000$). Based on research conducted by Sinta Bella et al. (2023), it was concluded that the community (pre-elderly) on average has good knowledge, good attitudes, and good behavior in stroke prevention. It was found that most respondents showed good knowledge (72.2%), the majority of respondents also showed good attitudes (68.0%), while for stroke prevention behavior, the majority of respondents had good behavior (59.8%). The results of statistical tests can be concluded that there is no relationship between the level of knowledge about stroke and stroke prevention behavior ($p = 0.866$). Based on research conducted by Adi Nurapandi, et al (2024), it was concluded that family support for stroke patients during treatment, the highest frequency was in the good family support category with 15 respondents (46.9%). Compliance of stroke patients during treatment, the high frequency was in the high compliance category with 16 people (50.0%). There was an influence of family support on compliance of stroke patients in undergoing treatment with the results of the statistical test $p \text{ Value} < \alpha$ ($p = 0.000 < 0.05$).

A preliminary survey conducted at Bakti Timah Hospital in Pangkalpinang in December 2024 showed that some patients accompanied by their families were non-compliant in taking medication and undergoing therapy. There were 5 patients who were non-compliant in taking medication according to the recommended schedule. This non-compliance can increase the risk of stroke recurrence and slow the recovery process. Interviews with the 5 patients obtained attitudinal variables such as lack of family support in reminding patients to take medication, perceived side effects of medication; such as dizziness or nausea, so patients were reluctant to continue taking it, lack of patient understanding of the importance of compliance in stroke treatment, economic factors that made it difficult for patients to purchase medication regularly, and treatment that was considered too complicated or difficult for patients to remember. Non-compliance in taking medication increases the risk of recurrent ischemic stroke and slows patient recovery. Therefore, family support, patient understanding of the importance of therapy, and good medical supervision are essential to improve compliance in ischemic stroke treatment. Thus, this study is important because non-compliance in taking medication in ischemic stroke patients can increase the risk of recurrent stroke and worsen the patient's condition. The results of this study can help in developing more effective intervention strategies to improve the quality of life of ischemic stroke patients in Indonesia. Therefore, based on the background above, the researcher is interested in researching "Factors Related to Medication Compliance in Ischemic Stroke Patients at Bakti Timah Hospital, Pangkalpinang in 2025".

METHOD

This study used a quantitative method with a cross-sectional design. A sample of 88 respondents was drawn from ischemic stroke patients undergoing outpatient care at Bakti Timah Hospital in Pangkalpinang. The sampling technique used was purposive sampling. Data collection was conducted using a validated questionnaire, namely the MMAS-8 to measure medication adherence, as well as special instruments to measure knowledge, attitudes, and family support. Data analysis also used the Chi-Square test.

RESULTS

The Relationship Between Knowledge and Medication Compliance at Bakti Timah Hospital, Pangkalpinang, in 2025

Knowledge	Medication Compliance						Total		<i>p-value</i>
	Obedient		Quite Compliant		Not obey				
	n	%	n	%	n	%	N	%	
Good	23	79.3	2	6.9	4	13.8	28	100	0,000
Enough	2	18.2	6	54.5	3	27.3	11	100	
Not enough	4	8.3	1	2.1	43	89.6	48		
Total	29	33.0	6.9	10. 50	56.8	88	100		

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Based on Table 7, it can be seen that the majority of respondents with good knowledge were compliant in taking medication, namely 23 people (79.3%), while only 4 people (13.8%) were non-compliant. Respondents with sufficient knowledge were mostly in the fairly compliant category, namely 6 people (54.3%), and there were 3 people (27.3%) who were non-compliant. Meanwhile, respondents with less knowledge were mostly non-compliant in taking medication, namely 43 people (89.6%), and only 4 people (8.3%) were compliant. Overall, of the 88 respondents, there were 29 people (33.0%) who were compliant, 6 people (6.9%) who were fairly compliant, and 50 people (56.8%) who were non-compliant. The results of the statistical test using the *Chi Square Test* p-value results obtained 0,000 or $\leq$ of 0.05 which means there is a relationship between knowledge and compliance in taking medication .

The Relationship Between Family Support and Medication Compliance at Bakti Timah Hospital, Pangkalpinang, in 2025

Family Support	Medication Compliance						Total		<i>p-value</i>
	Obedient		Quite Compliant		Not obey				
	n	%	n	%	n	%	N	%	
Tall	25	89.3	1	3.6	2	7.1	28	100	0,000
Currently	3	21.4	6	42.9	5	35.7	14	100	
Low	1	2.2	2	4.3	43	93.5	46	100	
Total	29	33.0	9	10.2	50	56.8	88	100	

Based on Table 8, it can be seen that the majority of respondents with high family support were compliant with taking medication, namely 25 people (89.3%), while only 2 people (7.1%) were non-compliant. Respondents with moderate family support showed that the majority were non-compliant with taking medication, namely 10 people (71.4%), while only 3 people (21.4%) were compliant. Meanwhile, respondents with low family support were almost all non-compliant with taking medication, namely 43 people (93.5%), while only 1 person (2.2%) was compliant. The results of statistical tests using the *Chi- Square Test* obtained a p-value of 0,000 or $\leq$ of 0.05 which means there is a relationship between family support and compliance in taking medication .

Table 1 Relationship between Attitudes and Medication Compliance at Bakti Timah Hospital, Pangkalpinang, in 2025

Attitude	Medication Compliance						Total		<i>p-value</i>
	Obedient		Quite Compliant		Not obey				
	n	%	n	%	n	%	N	%	
Positive	20	80.0	2	8.0	3	12.0	25	100	0,000
Neutral	5	45.5	4	36.4	2	18.2	11	100	
Negative	4	7.7	3	5.8	4	86.5	52	100	
Total	29	33.0	9	10.2	5	56.8	88	100	

Based on Table 9, it can be seen that the majority of respondents with a positive attitude were compliant with taking medication, namely 20 people (80.0%), while only 3 people (12.0%) were non-compliant. Respondents with a neutral attitude were mostly non-compliant with taking medication, namely 4 people (36.4%), while only 5 people (45.5%) were compliant. Meanwhile, respondents with a negative attitude were almost entirely non-compliant with taking medication, namely 45 people (86.5%), while only 4 people (7.7%) were compliant. The results of the statistical test using the *Chi Square Test* obtained a p-value result. 0,000 or $\leq$ of 0.05 which means there is a relationship between attitudes towards compliance with taking medication .

DISCUSSION

The Relationship Between Knowledge and Medication Compliance at Bakti Timah Hospital, Pangkalpinang Researchers believe the link between knowledge and adherence to stroke medication at Pangkalpinang's RSBT is due to low health literacy among this patient group. Many stroke patients, particularly those from the elderly and lower socioeconomic groups, do not fully understand the chronic nature of stroke and the importance of long-term therapy. They often assume that medication is only necessary when symptoms appear or during early recovery, unaware that discontinuing treatment can significantly increase the risk of recurrent stroke.

The Relationship Between Family Support and Medication Compliance at Bakti Timah Hospital, Pangkalpinang

According to researchers, there is a relationship between family support and adherence to stroke medication at Pangkalpinang's National Hospital for Stroke (RSBT Pangkalpinang). This is because stroke patients with cognitive or mobility impairments rely heavily on their families to prepare medications and remind them to take them. When this support is absent, the risk of forgetting or making dosage errors increases significantly. Data shows that 72% of patients with family support make at least one medication error within a week. A second important factor is the lack of emotional support. Families who are not actively involved tend not to provide motivation or positive reinforcement for patients. Yet, the long process of accepting the post-stroke condition often requires psychological support to maintain long-term treatment motivation.

The Relationship Between Attitudes and Medication Compliance at Bakti Timah Hospital, Pangkalpinang

According to researchers' assumptions, there is a relationship between attitudes and compliance with stroke medication at Pangkalpinang's RSBT. The majority of stroke patients who exhibit negative attitudes toward treatment, such as feeling tired of taking medication for life, disbelieving in the medication's effectiveness, or considering themselves recovered, tend to be noncompliant with the schedule and dosage recommended by healthcare professionals. Researchers believe this negative attitude stems from patients' lack of understanding of the importance of long-term treatment to prevent relapse or further complications. Furthermore, unpleasant personal experiences while taking medication (such as side effects or discomfort) can also reinforce these negative attitudes. In such circumstances, patients are more easily encouraged to stop or ignore treatment, especially if they lack adequate emotional support or education from family or healthcare professionals.

CONCLUSION

Based on the results of a study on medication adherence at Bakti Timah Hospital in Pangkalpinang in 2025, it can be concluded that knowledge, family support, and attitude significantly influence patient adherence. Adequate knowledge of the types and benefits of medications fosters a strong understanding in patients, while a positive attitude serves as an internal driver for consistency. At the same time, active family support serves as an external reinforcement, ensuring patients adhere to their medication regimens according to medical guidelines. Based on these findings, strategic and integrated steps are needed from various parties to optimize treatment adherence, particularly in preventing stroke recurrence in patients. Educational institutions are expected to expand and improve health education programs on an ongoing basis to build public medical literacy from an early age. From a healthcare perspective, nurses play a key role in regularly monitoring patient adherence, one of which is through a more structured *home visit program*. At the personal and family level, treatment success depends heavily on synergy within the home environment. Family members are encouraged to play an active role in supporting patients, both by monitoring daily medication schedules and ensuring a steady supply of medication at home. Ultimately, optimal medication adherence requires the patient's own awareness of the importance of taking medication regularly to maintain quality of life and control the risk of disease recurrence.

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