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Perceptions Againts Disease and Medicine Consumption Adherence of Stroke Patients at X Hospital In Central Java

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ABSTRACT: The increasing prevalence of stroke requires attention. Medication adherence and disease perception are important in stroke treatment. This research aimed to provide an overview of disease perception and medication adherence among stroke patients at Hospital X, Central Java Province. Using a quantitative, cross-sectional design, data were collected by administering validated questionnaires to eligible JKN stroke patients treated during the study period. Participants had to be at least 18 years old, willing to participate, and diagnosed with stroke within the previous three months. Medication adherence was assessed using the Morisky Medication Adherence Scale, while illness perception was evaluated via the Brief Illness Perception Questionnaire. On average, respondents had experienced a stroke for 2.62 years and had histories of diabetes mellitus, hypertension, cholesterol, heart disease, and gout. The illness perception score averaged 57.59 (> 40), indicating a positive perception. Among respondents, 31 showed high compliance, 45 had medium compliance, and 24 had low compliance. The findings indicate that most patients have a good understanding of the disease and participate in both pharmacological and non-pharmacological treatments, such as adopting a healthy diet, making lifestyle modifications, and engaging in regular physical activity. Non-compliance with medication included discontinuing use due to adverse effects or feeling better, forgetting medication when travelling, and difficulty remembering doses.

Keywords: Compliance; Hospital; Perception; Stroke; Questionnaire.

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INTRODUCTION

Stroke is the leading cause of death and disability worldwide (Mendis, 2013). WHO estimates that 15 million people worldwide suffer from stroke. Five million of them pass away, and a further five million become permanently disabled, burdening families and communities (World Stroke Organization, 2022).

In Indonesia, the stroke incidence rate remains high. The 2023 Indonesian Health Survey reported an 8.3% prevalence of stroke (diagnosed by doctors) among individuals aged ≥15 years. Among those over 60 years, stroke is one of six illnesses with the highest levels of reliance (Kementerian Kesehatan RI, 2023). These findings indicate that stroke continues to pose a significant health challenge in Indonesia. One contributing factor is the public's lack of awareness regarding early warning signs, which delays treatment (Kementerian Kesehatan RI, 2019a).

Because stroke necessitates intensive rehabilitation and long-term care, medication adherence is crucial. Patient compliance and illness perception play a key role in stroke treatment. Previous research found that non-adherence to medication increases the risk of recurrent stroke by 4.39 times (Putra et al., 2016). Positive illness perception can improve treatment outcomes, while negative perception may worsen the condition (Sawyer et al., 2019). Understanding patients' illness perception is essential to help them recognize their condition and solve related problems.

One important aspect of managing chronic illness is taling medications adherence (Puspita & Shomad, 2018). Higher healthcare expenses, greater morbidity and mortality, and long-term problems can result from non-adherence. Adherence is significantly influenced by a patient's understanding of their medication and their perception of their illness. (Widjaja et al., 2021). The purpose of this study is to investigate the relationship between stroke patients' perceptions of their condition and their treatment adherence. The findings are expected to reveal how patients perceive their illness and adhere to medication during hospital-based stroke care.

METHODS

This quantitative study used an analytical observational design with a cross-sectional approach. This research has been approved by the Research Ethics Committee Stifar Yayasan Pharmasi Semarang with number 675/EVM-NA/KEPK/STIFAR/EC/VIII/2024. Researchers collected data from August to September 2024 at Hospital X in Central Java. The population consisted of stroke patients receiving treatment under the National Health Insurance at Hospital X during the study period. The sample included all outpatient stroke patients who met the following inclusion criteria: a diagnosis of stroke for at least three months, being 18 years or older, and being willing to participate by signing an informed consent form. The exclusion criterion was pregnancy.

Researchers used two instruments to collect data: the Morisky Medication Adherence Scale (MMAS-8) to assess medication adherence and the Brief Illness Perception Questionnaire (B-IPQ) to measure patients' perceptions of their illness. The MMAS-8 consists of eight items—four assessing reasons for non-adherence (e.g., forgetting, apathy, stopping medication when feeling better, or taking it only when unwell) and four evaluating self-regulation efforts (Chowdhury & Chakraborty, 2017). This study used the validated Indonesian version of MMAS-8. Items 1, 2, 3, 4, 6, and 7 are unfavorable: a "yes" answer scores 0, while "no" scores 1. Item 5 is favorable: "yes" scores 1, "no" scores 0. Item 8 offers

graded responses: "never" scores 1; "once in a while" scores 0.75; "sometimes" scores 0.5; "usually" scores 0.25; and "always" scores 0 (Morisky et al., 2008). Total scores determine adherence levels: high (score = 8), medium (score = 6–7), and low (score < 6).

The Indonesian version of the B-IPQ comprises nine items that address dimensions such as consequences, duration, personal control, treatment control, identity, concern, understanding, and emotional response (Pratiwi et al., 2019). Items 1–8 use a 0–10 scale. Item 9 asks respondents to list perceived causes of stroke. The total score ranges from 0 to 80 (Robiyanto et al., 2018). Researchers categorized responses as either negative (code 1) or positive (code 2) illness perception.

RESULT AND DISCUSSION

The subjects of this study consisted of all stroke outpatients who visited the hospital between August and September 2024. Researchers collected data from 100 respondents who met the inclusion criteria. Table 1 presents the sociodemographic characteristics of the respondents.

Based on gender and age, most respondents were male (77%) and fell within the 46–65 age group (63%). Age and gender are known non-modifiable risk factors for stroke. A prospective study conducted in 28 hospitals across Indonesia found that stroke incidence was higher in men than women, with an overall mean age of 58.8 years. Men had a lower average age (57.5 years) compared to women (60.4 years) (Riza et al., 2019).

Most respondents (94%) were married. Several previous studies also reported that the majority of stroke patients were married (Ariska et al., 2020). Although marital status is not a risk factor for stroke, spousal support can positively influence treatment adherence, reduce anxiety, and enhance comfort, ultimately improving patients' quality of life (Hafdia et al., 2018).

The majority (40%) had completed senior high school, while others had educational backgrounds ranging from elementary school to master's degrees. This finding is consistent with earlier research, which shows that the majority of respondents only completed secondary school. (Fauzia et al., 2022). The most significant percentage of respondents had completed senior high school, according to another Indonesian poll (Harmayetty et al., 2020).

Regarding employment, more than half of the respondents (63%) had other types of work, including housework, gardening, odd jobs, or were unemployed. Some could no longer work due to stroke-related conditions or had already reached retirement age. Others remained unemployed because of disabilities that hindered their ability to work. Previous research indicated that unemployed individuals had a 4.67 times greater risk of stroke than those who were employed (Laily, 2017).

Information on the patient's disease data

Considering the medical records of the patients, respondents had experienced a stroke for an average of 2.62 years. A small portion (5%) had lived with stroke for more than 10 years. A previous study reported that most respondents (67.1%) had experienced stroke for 1–5 years, while only a few (2.7%) had lived with stroke for more than 10 years (Ramdani, 2018). Prolonged stroke duration often led respondents to neglect treatment. Several stated that they felt healthy and therefore skipped routine check-ups, which could increase the risk of recurrent stroke.

Table 1. Sociodemographic Characteristics

Sociodemographic Characteristics	N (100)	%
Gender		
Male	77	77
Female	23	23
Age		
18 - 25-year-old	1	1
26 - 45-year-old	5	5
46 -65-year-old	63	63
Older than 65-year-old	31	31
Marital status		
Married	94	94
Single	0	0
Widow/Widower	6	6
Latest Education		
Not going to school	3	3
Primary	22	22
Junior	17	17
Senior	40	40
Diploma I	0	0
Diploma II	0	0
Diploma III	3	3
Diploma IV	0	0
Bachelor	12	12
Master	2	2
Doctoral	1	1
Etc	0	0
Occupation		
Civil Servant	9	9
Private employees	7	7
Entrepreneurs	19	19
Army/Police Officers	2	2
Etc	63	63

Over half of the respondents (56%) had a history of medical conditions that could potentially cause a stroke. These included heart disease, high blood pressure, high cholesterol, diabetes mellitus, and gout. Other reported conditions included kidney failure, chronic kidney disease, kidney stones, pinched nerves, and gastric disorders. Another study identified hypertension, diabetes mellitus, heart disease, high cholesterol, smoking behavior, obesity, and physical activity as risk factors for stroke at Indramayu Regional Hospital. That study concluded that hypertension and physical inactivity were independent risk factors associated with stroke types (Wayunah & Saefulloh, 2016).

Some respondents (28%) had a history of smoking. Chemicals in cigarettes increase the risk of thrombus formation in atherosclerotic arteries and cause chronic effects associated with atherosclerosis, thus elevating the risk of thrombotic and embolic stroke (Goldstein et al., 2011), according to the Ministry of Health Regulation No. HK.01.07/MENKES/394/2019 on National Guidelines for Stroke Management, family history, cardiovascular disease, high blood pressure, smoking, diabetes, dyslipidemia, atrial fibrillation, patent foramen ovale (PFO) with right-to-left shunt, other heart conditions,

asymptomatic carotid stenosis, sickle cell disease (SCD), polycythemia, hormone replacement therapy, oral contraceptives, obesity, and excess body fat are all known risk factors for stroke. (Kementerian Kesehatan RI, 2019b).

Adherence

Medication adherence was assessed using the Morisky Medication Adherence Scale (MMAS-8). Each item was assessed individually, and results were interpreted based on the total score. The maximum score each respondent could achieve was 8. The scores were then classified into three categories: "high" (score of 8), "moderate" (score of 6–7), and "low" (score less than 6).

Table 2. Classification of Medication Adherence Based on MMAS-8.

Adherence	Respondents	Percentages (%)
High	31	31
Moderate	45	45
Low	24	24
Total	100	100

Table 2 indicates that 31 respondents demonstrated high adherence, 45 showed moderate adherence, and 24 had low adherence. Several respondents reported discontinuing medication without consulting a physician, either due to perceived adverse effects or when they felt their condition had improved. Others forgot to bring their medicine when travelling or struggled to remember the correct usage.

Patient adherence has a significant impact on the success of treatment. Treatment outcomes cannot reach their full potential without patient awareness and responsibility (Sari, 2016). Patients with high adherence typically continue medication unless advised otherwise by a physician or healthcare professional. Regardless of whether they feel better or worse, they remain willing to continue treatment unless instructed otherwise by a physician (Villar, 2024). According to the World Health Organization (2003), adherence refers to the extent to which patients follow medical treatment instructions. It also encompasses a range of health-related behaviours, such as dietary and lifestyle changes, that extend beyond merely taking prescribed medications as directed by healthcare professionals.

A systematic literature review conducted by Talango (2024) found that medication adherence is related to knowledge level. Annisaa et al. (2015) found a correlation between treatment beliefs and adherence to therapy to prevent recurrent stroke attacks. Another study found that a higher risk of an early recurrent ischemic stroke is linked to non-adherence to treatment (Herlambang et al., 2017).

Perception of Illness

Perception of illness was measured using the B-IPQ (Brief Illness Perception Questionnaire) score. Items 1 to 8 were assessed by calculating the average score of each question. Each item was rated on a 0–10 scale, with higher scores indicating stronger perceptions related to the specific dimension. Mid-range scores suggested a moderate

impact of the dimension on the individual's illness perception. Table 3 shows the average scores for each item.

Table 3. B-IPQ Instrument Results based on Average

Item	1	2	3	4	5	6	7	8	Score Total
Average	7.35	7.53	7.24	8.36	5.87	7.56	6.98	6.7	57.59

Item 1 had an average score of 7.35, indicating that respondents perceived stroke as significantly affecting their lives (negative perception). Item 2 had an average score of 7.53, suggesting considerable concern about the chronic progression of the disease (negative perception). Item 3 scored an average of 7.24, indicating that respondents perceived themselves as having a moderate degree of control over their condition (positive perception). Item 4 received the highest average score of 8.36, reflecting a strong belief in the effectiveness of treatment (positive perception). Item 5 had a score of 5.87, indicating that respondents experienced a moderate number of symptoms (negative perception). Item 6 averaged 7.56, showing notable emotional concern about the illness (negative perception). Item 7 scored 6.98, suggesting a moderate level of understanding about the disease (positive perception). Item 8 scored 6.7, indicating that respondents perceived stroke as moderately affecting them emotionally (negative perception).

The last Item assessed perceived causes of stroke. Diet, stress, history of falls, diabetes mellitus, hypertension, exhaustion, smoking, mood swings, heavy workload, fatty and fried foods, genetics, emotional instability, aging, genetics, gout, a history of vertigo, a preference for sweet and salty foods, junk food, lack of exercise, irregular sleep patterns, lifestyle factors, high cholesterol, insufficient rest, and a history of vertigo were the most commonly mentioned factors by respondents. A few of these elements align with the national stroke management guidelines published by the Indonesian Ministry of Health (Kementerian Kesehatan RI, 2019b), which include diabetes, hypertension, smoking, cardiovascular disease, family history, and dyslipidemia.

These findings align with those reported by Robiyanto (2018), where the average B-IPQ score exceeded 40, indicating that most respondents held a relatively strong perception of their illness. Overall, patients perceived stroke as a serious threat. Their anxiety appeared to stem from the worsening condition and concern about disease progression. The most commonly believed causes of stroke include degenerative diseases, poor diet, and genetic factors (Robiyanto et al., 2018).

CONCLUSION

The study concluded that most patients had a positive perception of their illness, as evidenced by their engagement in both pharmacological and non-pharmacological treatments, such as adopting a healthy diet, maintaining a healthy lifestyle, and exercising regularly. The leading causes of non-adherence to medication were forgetfulness, stopping the prescription while suffering adverse effects or feeling better, forgetting to bring medication when travelling, and having trouble remembering how to take the drug.

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AUTHOR CONTRIBUTION

FX: Concepts or ideas; design; definition of intellectual content; literature search; experimental studies; data analysis; manuscript preparation.
AB: definition of intellectual content; literature search; experimental studies; data analysis.
SR: Manuscript preparation, data analysis, manuscript editing; manuscript review.

ETHICS APPROVAL

This research has been approved by the ethics commission Stifar Yayasan Pharmasi Semarang with number 675/EVM-NA/KEPK/STIFAR/EC/VIII/2024.

CONFLICT OF INTEREST (If any)

None to declare

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