



## The relationship between self-efficacy and self-management in post stroke patients at Home Stroke Rehabilitation Malang

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### ABSTRACT

**Background:** Stroke is a neurological disorder characterized by blockage of blood vessels. The effects of stroke cause problems with motor, sensory and cognitive functions. These problems result in patients often complaining and feeling useless, so patients experience a decrease in self-efficacy. Low self-efficacy will cause a low level of self-acceptance and motivation that affects the patient's confidence in performing functional activities and self-management related to the healing process in stroke patients.

**Objective:** This study aimed to analyze the relationship between self-efficacy and self-management in stroke patients.

**Methods:** The research design used a cross-sectional study method conducted in December 2022 with a population of all stroke patients at Home Stroke Rehabilitation Malang who met the criteria to become participants in this study. Measurement of self-efficacy using The Stroke Self Efficacy Questionnaire (SSEQ) and self-

management using The Southampton Stroke Self Management Questionnaire (SSSMQ). Rank Spearman was used to determining the relationship between the two variables showed that out of 49 respondents, there was a relationship between self-efficacy and self-management using the Rank Spearman test.

**Results:** The study's result ( $p = 0.000$ ,  $r = 0.949$ ) shows a very strong correlation. It can be concluded that there is a very strong relationship between self-efficacy and self-management in stroke patients because high confidence is very influential on the actions or attitudes of patients so that patients can move and prevent recurrent strokes and carry out rehabilitation programs properly.

**Conclusion:** The higher the self-efficacy, the higher the self-management in post-stroke patients and vice versa. These two crucial components will affect the rehabilitation phase of post-stroke patients.

**Keywords:** self-efficacy, self-management, stroke.

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### INTRODUCTION

Stroke is a neurological disorder characterized by blockage of blood vessels. Clots form in the brain and disrupt blood flow, clogging arteries and causing blood vessels to rupture, leading to bleeding. The rupture of an artery leading to the brain during a stroke causes the sudden death of brain cells due to lack of oxygen.<sup>1</sup>

The effect of stroke is that non-traumatic cerebral circulatory disorders cause impaired nerve function in stroke. These nerve disorders cause problems with motor, sensory and cognitive functions.<sup>2</sup> Motor and sensory disorders experienced by stroke patients include muscle weakness, spasticity, paralysis, hypertonia, and increased physiological reflexes.<sup>3</sup> Cognitive disorders experienced by patients are memory, attention, language, executive function, and visuospatial.<sup>4</sup> These problems cause patients to complain often and feel useless, which indicates that patients experience decreased self-confidence. Patients dependent on fulfilling their daily needs tend to feel isolated, wasted, and a burden to their families.<sup>5</sup> Self-efficacy is one factor that influences the ability to care for themselves every day and be

motivated to be independent.<sup>6</sup>

Self-efficacy is an attitude of a person who accepts and appreciates the physical condition of the existence of limitations without reproaching himself and has high self-confidence in carrying out treatment to obtain healing.<sup>7</sup> Low self-efficacy will cause a low level of self-acceptance and motivation that affects the patient's confidence in performing functional activities and self-management related to the healing process in stroke patients.<sup>8</sup> Self-management leads to an individual's ability to manage symptoms, care, physical, psychosocial, and lifestyle changes suffered in chronic conditions. Indicators in self-management of post-stroke patients are capacity, confidence in interacting, strategies, and guidance by health professionals.<sup>9</sup>

Previous research conducted by (Sumbogo et al., 2015) stated that the response to self-acceptance in stroke patients showed that patients who accepted their condition were (32.6%), patients who did not accept their condition were (54.3%), and patients who did not accept their condition were (13.0%). This shows that most stroke patients accept their condition less. Accepting the condition of post-

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stroke disability is the key to reducing anxiety and preventing depression. If patients can accept the conditions they experience and not dissolve in sadness, their motivation to recover and adhere to treatment will increase.<sup>8</sup>

Based on the results of preliminary studies, researchers conducted interviews with families of stroke patients at Home Stroke Rehabilitation Malang, and it was found that 4 out of 5 stroke patients had poor self-efficacy because the patients did not have the confidence to recover, felt inferior, felt unlucky, anxious, hopeless. Patients have also not been able to carry out self-management properly, which is indicated by the behavior of post-stroke patients who are less compliant with undergoing treatment and rehabilitation, physical activity, and emotional control impacts the length of treatment and the inability to meet the daily needs of the psychological response of low self-acceptance of stroke patients.

The description described above is the background to analyze further the relationship between self-efficacy and self-management in post-stroke patients at Home Stroke Rehabilitation Malang.

## METHODS

The population in this study were 49 post-stroke patients undergoing rehabilitation at Home Stroke Rehabilitation Malang. The sample in this study was taken using a total sampling technique by fulfilling the inclusion criteria, where the entire population was sampled. Sampling was done offline with inclusion criteria: (a) Stroke patients with both ischaemic stroke and hemorrhagic stroke who are undergoing rehabilitation at Home Stroke Rehabilitation Malang; (b) Post-stroke patients who can communicate and, if they cannot communicate are accompanied by their families; (c) Patients who are willing to become respondents. Exclusion criteria: (a) Patients who experience disability or paralysis that is not caused by stroke; (b) Patients who are not willing to become respondents.

Data was collected offline using standard health protocols and interviewing to find respondents who met the inclusion criteria. Before the research was carried out, the procedure and objectives of the study were explained. If they have met the inclusion criteria and are willing to become a research sample, an informed consent sheet is given, and self-efficacy and self-management are measured. Self-efficacy using The Stroke Self Efficacy Questionnaire (SSEQ), self-management using The Southampton Stroke Self-Management Questionnaire (SSMQ), all respondents filled out the questionnaire based

on their current condition and without coercion from any party.

This study uses observational analytic research with a cross-sectional study design that measures self-efficacy related to stroke patients' self-beliefs (independent variables) and self-management related to stroke patients' management or self-control (dependent variables) at one time. This research was conducted at Home Stroke Rehabilitation Malang, Indonesia, in December 2022.

The tool used to measure self-efficacy using SSEQ is an assessment of self-efficacy in specific domains of function that shows good internal consistency after a stroke. The SSEQ consists of 13 question items divided into 2 domains, namely the functional domain consisting of questions (numbers 1, 2, 3, 4, 5, 6, 7, 8) and the self-management domain consisting of questions (numbers 9, 10, 11, 12, 13).<sup>11</sup> In the scoring: 0 = not sure, 1 = less sure, 2 = sure, 3 = very sure with interpretation results: 0-13= low self efficacy, 14-26= moderate self-efficacy, 27-39= high self-efficacy.<sup>12</sup>

The self-management assessment consists of 28 questions divided into 4 domains, namely the capacity domain consisting of questions (numbers 1, 2, 3, 4, 5, 6, 7, 8, 9), the confidence domain in interacting consists of questions (numbers 10, 11, 12, 13, 14, 15), the strategy domain consists of questions numbered (16, 17, 18, 19, 20, 21) and the health professional guidance domain consists of questions (numbers 22, 23, 24, 25, 26, 27, 28).<sup>13</sup> In scoring this questionnaire using a Likert scale is used from 1-3 (3 = strongly agree, disagree =1) for positive questions (number 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22), while for negative questions (number 1, 2, 3, 4, 5, 6, 7, 8, 10, 23, 24, 25, 26, 27, 28) the scoring is reversed.<sup>14</sup>

Respondent characteristics: data on respondent characteristics include: age, gender, latest education, employment status, type of stroke, number of strokes, length of stroke, length of stroke rehabilitation, self-efficacy and self-management presented in a descriptive table.

The Shapiro-Wilk test carried out all data that were not normally distributed. Hypothesis testing using the Spearman Rank Test was used to determine whether there was a significant relationship between the independent and dependent variables. Data were analyzed using SPSS version 25 computer software.

## RESULTS

Characteristics of Respondents based on the results of the analysis of [table 1](#) obtained data based on

**Table 1. Characteristics of study samples.**

Characteristics	Category	Frequency	Percentage (%)
Sex	Male	32	65.3
	Women	17	34.7
Age group	20-30 years	3	6.1
	31-40 years old	8	16.3
	41-50 years old	11	22.4
	>51 years old	27	55.1
Last education	Primary School	7	14.3
	Junior High School	6	12.2
	Senior High School	20	40.8
	College	16	32.7
Employment status	Work	32	65.3
	Not Working	17	34.7
Types of stroke	Ischaemic	36	73.5
	Haemorrhagic	13	26.5
Number of attacks	Firstly	39	79.6
	Sequel/more than 2 times	10	24.9
Stroke duration	<1 year	27	55.1
	1-2 years	15	30.6
	>2 years	7	14.3
Length of rehabilitation	1-4 months	27	55.1
	5-8 months	9	18.4
	9-12 months	13	26.5

**Table 2. Spearman Rank Test.**

Variables		n	P-value	r
Self-efficacy	Low	16	0.000	0.949
	Medium	8		
	High	25		
Self-management	Simply	17	0.000	0.949
	Medium	10		
	Good	22		

N, frequency; r, correlation value of Spearman rank test.

gender. The majority of respondents were male, namely 32 (65.3%), and the number of female respondents was 17 (34.7%). In the age group, the most significant number of respondents were in the > 51 years, as many as 27 (55.1%), and the least number of respondents were in the age range 20-30 years, as many as 3 (6.1%). Based on the latest education, the highest number of respondents in high school, as many as 20 (40.8%), and the few in junior high school, as many as 6 (12.2%). Based on the employment status, the majority of respondents were working as many as 32 (65.3%), and the number of respondents who did not work was 17 (34.7%).

Respondent characteristics based on the analysis of Table 1 obtained data based on the type of stroke, the majority of respondents were ischaemic stroke, namely 36 (73.5%), and the number of hemorrhagic stroke respondents was 13 (26.5%). The number of respondents' attacks, namely the first attack

39 (79.6%), and the number of sequel attack respondents / more than 2 times 10 (24.9%). Based on the duration of the stroke, the highest number of respondents was a stroke duration of <1 year 27 (55.1%), and the least number of respondents was a stroke duration of >2 years, 7 (14.3%). Based on the length of rehabilitation, the highest number of respondents was 1-4 months 27 (55.1%), and the least number of respondents was 5-8 months 9 (18.4%).

Results of the analysis of Table 2 obtained the results of 49 respondents who had low self-efficacy, namely 16 (32.7%), moderate self-efficacy 8 (16.3%), high self-efficacy 25 (51.0%) respondents and who had good self-management 17 (34.7%), moderate self-management 10 (20.4%), good self-management 22 (44.9%).

This study conducted the Spearman rank test to prove the relationship between self-efficacy and self-management in post-stroke patients undergoing rehabilitation at home stroke rehabilitation Malang. Based on Table 2 shows that the results of rank Spearman for self-efficacy with self-management resulted in a significance value of 0.000 (p-value <0.05). Indicates a meaningful relationship or correlation between the two variables tested. The Spearman rank correlation value is 0.949. A positive correlation value means that the direction of the correlation is positive. So self-efficacy has a unidirectional relationship with self-management if high self-efficacy means good self-management

and vice versa. While the strength of the correlation obtained, the results of the correlation strength are solid. So the two variables influence each other.

## DISCUSSION

The results of this study indicate that most stroke patients have high self-efficacy, as many as 25 (51.0%). This is in line with research (Ismatika, 2018), which states that good self-efficacy can affect patient self-management by having confidence that patients can carry out daily activities independently.<sup>15</sup>

Based on (Gangwani et al., 2022), a person's level of self-efficacy affects their motivation, such as how a person can set goals for themselves, determine efforts to achieve goals, determine how long a person lasts when faced with challenges, and determine individual resilience to failure. High self-efficacy is the most important thing to avoid prolonged stress and can generate trust, self-esteem, and enthusiasm for patients in recovery.<sup>8</sup> This is in line with research (Wahyuni, 2020), which states that high self-efficacy can make a patient able to accept his condition, but on the contrary, if a patient has low self-efficacy, it can cause anxiety which will have an impact on the patient's healing process.<sup>16</sup>

According to the researcher's assumption, self-efficacy relates to "belief in one's ability to organize and carry out the actions needed to produce certain achievements." health progress and improvement of recovery carried out in patients with stroke are influenced by motivation and encouragement from within and also from outside themselves so that it will lead to having high confidence or self-efficacy and optimism and also confidence that makes many high expectations and can maintain the actions needed to manage behavior in a better direction. Higher self-efficacy will affect the patient's self-esteem so that patients can control, maintain, and improve their health by motivating and training themselves to carry out daily activities independently.

Self-management in stroke patients in this study, researchers found as many as 22 (44.9%) with high self-management. Most respondents have high self-management. This is in line with research (Rahmawati, 2019) stating that high self-management in stroke patients is actively involved in their health conditions, such as being able to control their food, treatment, overcome the sequelae of stroke such as willing and routine exercise and rehabilitation places so that it will have an impact on a better quality of life.<sup>17</sup>

Based on research (Sulasri et al., 2022), one way to handle stroke patients is to improve self-

management, which aims to improve one's quality of life by problem-solving, goal setting, decision-making, self-monitoring, overcoming conditions, or interventions that maintain or improve physical and psychological function.<sup>18</sup> This is in line with research (Loupatty et al., 2019) that self-management effectively increases treatment compliance and reduces risk factors for recurrent disease if chronic conditions that can affect psychological and social conditions, as well as physical sequelae of stroke. Self-management is a strength to manage chronic diseases better, optimizing health and well-being. At the same time, some people affected by stroke report increased physical ability to move as they want and feel more enthusiastic in living their lives, and most importantly, not dependent on others.<sup>19</sup>

According to the researcher's assumption, a person's high self-confidence will have a level of self-management ability, which is caused by various supporting factors such as age, cognition, motivation, environment, and family support. Stroke patients will tend to be easily anxious, stressed, and worried, but if they can overcome it, their level of self-confidence increases. In this study, stroke patients with the most elderly age where in the elderly there are changes in a physiological function marked by the decline in overall body function, including the flexibility of blood vessels, the older a person's confidence and hope for recovery will decrease.

The relationship between self-efficacy and self-management in stroke patients based on the results of the Spearman rank bivariate test obtained results with a p-value of 0.000 ( $p < 0.05$ ) with a correlation coefficient of 0.897 ( $r > 0.05$ ), which shows a solid correlation. It can be concluded that there is a strong relationship between self-efficacy and self-management in post-stroke patients. This is in line with research (Gangwani, 2022) individuals with high post-stroke self-efficacy usually have greater confidence to participate in activities of daily living (ADL), a higher ability to overcome obstacles in their recovery, and usually have more excellent psychosocial function and well-being compared to those with low self-efficacy.<sup>8</sup>

Other research supports (Irawan, 2022) that if self-efficacy is high, it will be followed by an increase in the value of self-care management. Someone with self-confidence will have healthy coping and be motivated to make behavioral changes to achieve their goals.<sup>20</sup> In research (Peters, 2019) states that self-efficacy refers to the beliefs one has about one's capacity to perform behaviors that can lead to desired outcomes. Higher self-efficacy is associated with better outcomes, and more outcomes will make the rehabilitation period

more optimal. In improving self-efficacy medical personnel should be encouraged to be aware of the patient's level of self-efficacy as it will enable them to support the patient more effectively. Higher self-efficacy can improve the life quality for people with chronic diseases.<sup>21</sup>

## CONCLUSION

The level of self-efficacy is related to the level of self-management in post-stroke patients. The higher the self-efficacy, the higher the self-management in post-stroke patients and vice versa. These two crucial components will affect the rehabilitation phase of post-stroke patients. High confidence influences patients' actions or attitudes so that patients can move and prevent recurrent strokes and carry out rehabilitation programs properly.

## CONFLICT OF INTEREST

This research has no conflict of interest.

## FUNDING

No funding for this study.

## AUTHOR CONTRIBUTIONS

NSH conducted the research, was responsible for the research plan, collated the findings and collected the data. The draft manuscript and literature review were completed by SAM and AY. Data for this study were collected by NSH.

## ETHICAL CONSIDERATION

The Research Ethics Commission of the Faculty of Medicine, University of Muhammadiyah Malang stated that this research was ethically feasible with No.E.5.a/021/KEPK-UMM/I/2023.

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