



THE ASSOCIATION OF SPIRITUALITY WITH SELF-MANAGEMENT IN POST-STROKE PATIENTS: A CROSS-SECTIONAL STUDY

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ABSTRACT

Post-stroke patients tend to experience spiritual distress, characterized by seeking spiritual assistance and expressing excessive doubts about the meaning of life. The problems that arise in self-management among post-stroke patients are primarily caused by decreased independence and mobility, as well as inadequate family support, resulting in unmet patient needs and hindering their ability to manage themselves. To investigate the relationship between spirituality levels and self-management in post-stroke patients. This study employed a cross-sectional design involving 145 post-stroke patients selected through a convenience sampling technique. The study was conducted in June 2025 at Muhammadiyah Hospital Lamongan. The instruments used were the Daily Spiritual Experience Scale (DSES) and the Southampton Stroke Self-Management Questionnaire (SSSMQ) (Cronbach's α 0.94 and 0.90, respectively). The data were analyzed using the Pearson test. The results showed a strong correlation between the level of spirituality and self-management ($p = 0.000$; $r = 0.934$), with the highest correlation observed two months after the stroke ($r = 0.978$). The higher the level of spirituality, the higher the self-management ability of post-stroke patients. These findings highlight the importance of spirituality in promoting self-management among post-stroke patients, thereby improving their quality of life and recovery.

Keywords: self-management; spirituality; stroke patients

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INTRODUCTION

Stroke is the third leading cause of death worldwide, accounting for approximately 5.5 million deaths with around 13.7 million new cases each year (Feigin et al., 2025). In Indonesia, stroke ranks first as the leading cause of death across all age groups, contributing to 15.4% of total mortality. The prevalence of stroke in Indonesia has increased from 7% to 10.9%, or approximately 2,120,362 people, in 2018 (RISKESDAS, 2023). The incidence of stroke in East Java in 2021 revealed that the highest number of cases (>1,357) was found in Surabaya, as well as in the regencies of Gresik, Sidoarjo, Jember, Bangkalan, Madiun, Trenggalek, Ngawi, Tulungagung, Banyuwangi, and Lamongan (Natasya, 2023).

Stroke affects the brain's focal neurological function, leading to motor, sensory, speech, cognitive, and emotional impairments, as well as aphasia (Nabila et al., 2021), dysarthria, decreased memory and concentration, and dysphagia (Haryanti et al., 2023). Motor disturbances are characterized by weakness or paralysis on one side of the body, which interferes with daily activities and may be accompanied by pain, fatigue, and gait disturbance (Yunus et al., 2024). Sensory disturbances involve altered sensitivity to sensation, visual impairment, and hearing problems, such as tinnitus (Sandra et al., 2021). Speech disorders include difficulty understanding or producing speech (aphasia), slurred speech (dysarthria), and difficulty in writing and calculating. Cognitively, stroke

survivors often experience problems with attention, problem-solving, memory, concentration, and swallowing (dysphagia). Emotional disturbances are marked by extreme mood fluctuations and inappropriate emotional expressions, such as unexplained laughter or crying, which can lead to depression and frustration during recovery (Carolina, 2022). These effects cause stroke patients to become dependent on family members or caregivers for daily functioning (Darussalam, 2023)

Moreover, stroke affects patients' self-management, particularly their ability to manage their health. Patients often experience paralysis, psychological changes, poor quality of life, muscle weakness, and reduced ability to perform activities of daily living, leading to decreased independence (Laili et al., 2023). Self-management refers to an individual's ability to manage symptoms, treatment, physical and psychological effects, and lifestyle changes (Marviana, 2020). Problems in self-management among post-stroke patients are caused mainly by reduced independence and mobility, as well as suboptimal family support, which results in unmet needs and impairs their ability to manage themselves (Putri et al, 2023). Enhancing self-management can improve the spirituality of post-stroke patients, thereby promoting well-being and healthy living, allowing them to manage their health and daily activities independently, reduce caregiver dependence, and lower healthcare costs (Shuqi et al., 2023).

Inability to fulfil daily spiritual needs, feelings of discomfort, insecurity, and lack of confidence are factors that may trigger spiritual distress among stroke patients (Utami & Handayani, 2021). Additionally, drastic physical changes, reduced productivity, anxiety, helplessness, hopelessness, and emotional disturbances often emerge during the post-stroke rehabilitation process (Puspita, 2023). These factors collectively disrupt the spiritual well-being of patients and affect their ability to accept and manage their stroke condition (Utami & Handayani, 2021). Spiritual distress is characterized by seeking spiritual assistance, expressing excessive doubts about the meaning of life, voicing negative thoughts, refusing care, crying, anxiety, anger, loss of appetite, sleep disturbances, and increased blood pressure as a result of the illness (T. Mulyani et al., 2021).

The success of post-stroke management is influenced by individual factors, interventions, available facilities, and the surrounding environment (Marviana et al, 2020). Factors that affect self-management in stroke patients include motivation and internal or external encouragement, which build strong belief and hope, enabling patients to maintain better and more optimal self-management behaviors (Ekawati et al., 2022). Self-management comprises several core components, including problem-solving, decision-making, resource utilization, and patient–healthcare provider relationships, all of which enhance coping abilities and adaptation in post-stroke life (Laili et al., 2023). Beyond these factors, spirituality also plays a significant role in supporting self-management abilities (Puspita et al., 2023). Increased spirituality in post-stroke patients helps them manage anxiety, depression, and emotional instability resulting from physical changes (Sesrianty et al., 2024).

Spirituality is one of the most essential elements in supporting self-management among individuals with chronic illnesses, as it provides faith, support, and hope (Dharmayanti et al., 2022). Holistically, spirituality is an integral part of patient care. It is a multidimensional concept encompassing a sense of connection to something greater and the pursuit of meaning in life (Ardian, 2020). Individuals with chronic diseases such as stroke are closely related to spirituality, as illness significantly affects their quality of life, health, and emotional well-being (Muhtar et al., 2018). In some cases, a high level of spirituality may lead patients to fully surrender their health outcomes to God, which can sometimes result in reduced awareness or responsibility for optimal self-care and treatment adherence (Rukmana et al., 2025). Furthermore, spirituality also influences how individuals with chronic illnesses perceive the severity and meaning of their disease (Latchman, 2018).

A study by Yuniarti (2020) demonstrated that empowerment interventions for stroke patients in self-management effectively improved self-efficacy in disease management, self-care skills, and functional abilities among post-stroke patients. Those with higher levels of spirituality tend to have better coping mechanisms, face physical limitations more positively, and enjoy a higher quality of life. Religious coping strategies, such as prayer and meditation, help patients overcome physical and emotional challenges after a stroke. Therefore, integrating spiritual practices into stroke care is recommended to enhance rehabilitation and overall well-being (Rukmana et al., 2025). Based on previous studies, there has been no research specifically identifying the relationship between spirituality level and self-management. Thus, the researcher is interested in conducting further investigation on the relationship between spirituality level and self-management among post-stroke patients. This study aims to analyze the correlation between spirituality level and self-management in post-stroke patients.

METHOD

This study employed an analytical correlational design using a cross-sectional approach, in which data were collected from stroke patients at a single point in time. The research was conducted at the Neurology Outpatient Clinic of Muhammadiyah Lamongan Hospital from May 20 to June 15, 2025. The independent variable in this study was the level of spirituality, while the dependent variable was self-management. The study population consisted of stroke patients, both infarction and haemorrhagic types, who were discharged from Lamongan Muhammadiyah Hospital between January and April 2025, totalling 327 patients. The total sample that met the inclusion and exclusion criteria was 145 patients. The sampling technique used was convenience sampling, involving the selection of stroke patients visiting the Neurology Outpatient Clinic during the one-month data collection period who met the predetermined criteria. The inclusion criteria were stroke patients who attended follow-up visits at the Neurology Outpatient Clinic of Muhammadiyah Lamongan Hospital within 1, 2, or 3 months post-stroke, who were fully conscious, able to communicate, and with or without paralysis. The exclusion criteria included post-stroke patients of more than 3 months, total GCS <13, those with sensory aphasia, dementia, cognitive impairment, and/or mental disorders.

The instruments used in this study were the Daily Spiritual Experience Scale (DSES) to measure patients' spirituality level, and the Southampton Stroke Self-Management Questionnaire (SSSMQ) to measure self-management. The DSES questionnaire, adapted from Underwood & Teresi, (2002) translated into Indonesian by Riyanti (2021). It was a closed-ended questionnaire comprising 16 items, divided into four indicators: transcendental (10 items), environmental (2 items), communal (2 items), and personal (2 items). The total score ranged from 35 to 65, with response options: never, once in a while, sometimes, almost every day, every day, and many times a day. The scoring results were categorized into three levels: low, moderate, and high. The validity and reliability tests demonstrated that the questionnaire was valid and reliable, with a Pearson correlation value of 0.410 ($r > 0.352$, as per the r table) and a Cronbach's alpha value of 0.94 (Riyanti, 2021).

The SSSMQ, adopted from Boger (2014) and translated into Indonesian by Hidayat (2019). It was a closed-ended questionnaire consisting of 28 questions divided into four indicators: capacity (9 items), confidence in interactions (6 items), strategies (7 items), and professional guidance (6 items). The response options were always true, often true, sometimes true, sometimes false, often false, and always false. The total score ranged from 28 to 164 and was categorized into three levels: poor, adequate, and reasonable. The validity and reliability tests indicated that the questionnaire was valid and reliable, with a Pearson correlation value of 0.420 ($r > 0.348$, as per the table) and a Cronbach's alpha value of 0.90 (Hidayat, 2019). After obtaining permission from the Director of Muhammadiyah Lamongan Hospital, the researcher coordinated with the head of the Neurology Outpatient Clinic to schedule data collection. The researcher was stationed at the clinic to identify post-stroke patients attending follow-up visits and screened them based on inclusion and exclusion

criteria.

Eligible respondents were informed about the study’s objectives and procedures. Those who agreed to participate were asked to sign an informed consent form. Participants were then given the DSES and SSSMQ questionnaires, with the researcher providing assistance and clarification as needed. After completion, the researcher checked the questionnaires for completeness and accuracy, then tabulated the data. Data collection was conducted over one month, with an average of 5–7 respondents per day. Data were processed using SPSS version 23. Since the research data were on an interval scale, normality tests were conducted before performing statistical analysis. The Kolmogorov–Smirnov test results showed that both spirituality level and self-management data were normally distributed ($p = 0.069$ and $p = 0.200$, respectively). Therefore, the relationship between spirituality level and self-management was analyzed using the Pearson correlation test, with a significance level of $\alpha \leq 0.05$. This study obtained ethical approval from the Ethics Committee of Universitas Muhammadiyah Lamongan (No. 118/EC/KEP-S1/03/25). Ethical clearance ensured that the research complied with ethical principles, including providing clear information, obtaining informed consent from respondents, ensuring data confidentiality, and protecting participants’ rights in accordance with applicable regulations.

RESULT

The sample in this study consisted of 145 stroke patients out of a total of 327, with 230 patients excluded due to refusal to participate, failure to meet inclusion criteria (such as having a stroke more than one year prior), the presence of sensory aphasia, and/or dementia. Stroke patients discharged from the hospital within 1–4 weeks were classified as the 1-month post-stroke group ($n=51$), those discharged within 5–8 weeks were classified as the 2-month post-stroke group ($n=44$), and those discharged within 9–12 weeks were classified as the 3-month post-stroke group ($n=50$).

Table 1.
Respondent characteristics (N=145)

Variabel	Category	f	%
Gender	Male	70	48.3
	Female	75	51.7
Religion	Islam	145	100
Age (years old)	35 – 55	46	31.7
	56 – 65	60	41.4
	66 – 75	39	26.9
Education level	Elementary school	44	30.3
	Junior high school	46	31.7
	Senior high school	42	29.0
	Bachelor’s degree	13	9
Duration of illness	1-4 weeks	51	34.3
	5-8 weeks	44	32.4
	9-12 weeks	50	33.3
Type of stroke	Ischemic	128	88.3
	Hemorrhagic	17	11.7
Number of stroke episodes	First	118	81.4
	Second	21	14.5
	Third	6	4.1
Medical history	Hypertension	114	78.6
	Others	31	21.4

The participants recruited for this study were post-stroke patients discharged from the hospital within 1–3 months, including those experiencing their first, second, or third stroke. The results showed that the mean age of patients was 60.3 years with a standard deviation of 8.524. Among them, 51.7% were female, 41.4% were aged 56–65 years, 31.7% had a junior high school education, and 88.3% had ischemic stroke. In addition, 78.6% of stroke patients had a history of hypertension prior to the stroke, and 81.4% were experiencing their first stroke episode (Table 1).

Table 2.
Overview of patients' spirituality level at 1-3 months post-stroke (N=145)

Spirituality level	First month		Second month		Third month		Total	
	f	%	f	%	f	%	f	%
Low (15-39)	0	0	0	0	1	2	1	0.7
Moderate (40-64)	25	49	21	47.7	20	40	66	45.5
High (65-94)	26	51	23	52.3	29	58	78	53.8
Total	51	100	44	100	50	100	145	100
Min-Max	43-92		41-94		38-89		38-94	

Based on table 2, it was found that more than 53.8% of post-stroke patients in months 1, 2, and 3 had a high level of spirituality, with the highest proportion observed in the third month (58%), followed by the second month (52.3%), and the first month (51%). This pattern was the opposite of that observed among patients with moderate spirituality, which showed a gradual decline over time — the highest percentage being in the first month (49%), followed by the second month (47.7%), and the third month (40%). Moreover, a small proportion of patients (2%) exhibited low spirituality in the third month.

Table 3.
Self-management features of patients at 1-3 months post-stroke (N=145)

Self-management	1 month post stroke		2 month post stroke		3 month post stroke		Total	
	f	%	f	%	f	%	f	%
Poor (28-84)	0	0	1	2.3	1	2	2	1.4
Adequate (85-112)	9	17.6	7	15.9	13	26	29	20
Reasonable (113-168)	42	82.4	36	81.8	36	72	114	78.6
Total	51	100	44	100	50	100	145	100
Min-Max	95-151		88-155		72-164		72-164	

As shown in table 3, overall, 78.6% of post-stroke patients demonstrated a good level of self-management (score range 113–168). However, when analyzed by discharge duration, the highest proportion of patients with good self-management was in the first month (82.4%), followed by the second month (81.8%), and the third month (72%). Conversely, patients with a moderate level of self-management were most frequently found in the third month (26%), followed by the first month (17.6%), and the second month (15.9%).

Table 4.
Association between spirituality level and self-management in post-stroke patients 1-3 months (n=145)

Spirituality level	Self-management at 1-3 months post-stroke							
	Poor (28-84)		Adequate (85-112)		Reasonable (133-168)		Total	
	F	%	F	%	F	%	F	%
Low (16-39)	0	0	0	0	1	100	1	100
Modertae (40-64)	0	0	4	6.1	62	93.9	66	100
High (65-94)	2	2.6	25	32.1	51	65.4	78	100
Total	2	1.4	29	20	114	78.6	145	100
	r= 0.934		P=0.000					

The Pearson correlation test in Table 4 revealed a powerful association between the level of spirituality and self-management among post-stroke patients ($p < 0.001$; $r = 0.978$). Patients with a moderate level of spirituality mostly demonstrated reasonable self-management (93.9%). In comparison, those with a high level of spirituality also exhibited reasonable self-management in more than half of the cases (65.4%). Furthermore, the Pearson test results presented in Table 5 indicated a strong correlation between spirituality level and self-management among post-stroke patients at 1 month, 2 months, and 3 months after discharge ($p = 0.000$; $r = 0.863$; $p = 0.000$; $r = 0.978$; $p = 0.000$; $r = 0.941$, respectively). However, the highest correlation coefficient was observed in the second month, followed by the third month and the first month. Post-stroke patients within 1–3 months who had moderate or high levels of spirituality tended to demonstrate good self-management (greater than 60%).

Table 5.

Association between spirituality level and self-management at 1-3 months post stroke (n=145)

Spirituality level	Self-management (1-month post-hospital discharge) (n=51)				Self-management (2-month post-hospital discharge) (n=44)				Self-management (3-month post-hospital discharge) (n=50)			
	Poor	Adequate	Reasonable	Total	Poor	Adequate	Reasonable	Total	Poor	Adequate	Reasonable	Total
Low (16-39)	0	0	0	0	0	0	0	0	0	0	1 (100)	1 (2)
Moderate (40-64)	0	0	25 (100)	25 (49)	0	0	21 (100)	21 (47.7)	0	4 (20)	16 (80)	20 (40)
High (65-94)	0	9 (34.6)	17 (65.4)	26 (51)	1 (4.3)	7 (30.4)	15 (65.2)	23 (52.3)	1 (3.4)	9 (31)	19 (65.6)	29 (58)
Total	0	9 (17.6)	42 (82.4)	51 (100)	1 (2.3)	7 (15.9)	36 (81.8)	44 (100)	1 (2)	13 (26)	36 (72)	50 (100)
P	0.000				0.000				0.000			
R	0.863				0.978				0.941			

DISCUSSION

The results of this study indicate a strong relationship between the level of spirituality and self-management, meaning that the higher the level of spirituality, the higher the level of self-management, and conversely, the lower the spirituality, the lower the self-management of post-stroke patients. However, there were differences in spirituality levels among post-stroke patients at 1, 2, and 3 months after discharge, with the highest spirituality level observed at 3 months post-discharge (58%). This finding aligns with Handayani (2020) who stated that the duration after stroke correlates with spirituality levels, showing a gradual increase (particularly after 3 months), indicating spiritual development as a result of the adaptation process post-stroke. Religious coping strategies can enhance spirituality, maintain self-esteem, provide a sense of life meaning, and foster psychological comfort and hope. Spiritual interventions over three months significantly increase serotonin levels, which are associated with reduced anxiety and improved adaptation. Spirituality plays an important role for post-stroke patients in accepting their condition, finding meaning, being patient, thinking positively, and strengthening their relationship with God (Nurahman, 2025).

Apart from differences in spirituality levels, variations in self-management were also observed among patients 1, 2, and 3 months post-stroke, with the best self-management level found at 1 month post-stroke in 42 patients (82.4%). Previous studies have stated that at one month after stroke, patients are typically in the early adaptation phase following hospital discharge. At this stage, self-management is relatively good because patients still receive intensive support from healthcare providers and family members. Spirituality begins to function as a coping mechanism but is not yet fully optimal since patients are still focused on physical recovery (Sabila, 2022). Two months after a stroke, patients tend to become more independent, and strong spirituality enhances their motivation and ability to manage their condition autonomously. Positive spiritual support and religious coping improve resilience and self-efficacy in self-management. At this stage, patients begin to internalize spiritual values as a source of strength for maintaining consistent rehabilitation (Setyaputra, 2023). Three months after discharge, self-management and spirituality may fluctuate depending on the social and medical support patients receive. Some may experience decreased motivation due to persistent physical and psychological challenges. However, patients with higher spirituality tend to maintain better self-management than those with lower spirituality (Setyaputra, 2023).

Post-stroke patients classified as having good self-management demonstrate strong abilities in managing their condition, including adhering to medication, regulating their diet, and maintaining physical exercise. This finding is consistent with Hutagaol (2022) who stated that good self-management indicates that patients understand how to conduct proper treatment and care, including managing recurrent stroke symptoms and their physical and psychological consequences. The lowest level of self-management (2%) was found in patients three months post-stroke, possibly due to limited disease knowledge, lack of social support, and psychological issues such as depression. However, this was not further explored in this study.

Self-management is essential for post-stroke patients to reduce morbidity and mortality related to stroke (Syamsuddin, 2023). The primary principle of self-management in stroke patients is to

enhance coping skills for adjusting to life after stroke, managing emotions, and improving quality of life (Kusyati, 2024). The level of self-management among post-stroke patients may be influenced by age, with most respondents being elderly (68.3%), and 84.4% of them exhibiting good self-management. Older individuals tend to have a better understanding of their illness, but often face limitations in independently implementing self-management strategies. Therefore, elderly stroke patients require family support to achieve optimal health (Purnama et al., 2021). According to the Health Belief Model, health behaviour is influenced by personal beliefs about health and perceptions of illness, where individuals at risk or already ill are more likely to take appropriate actions to prevent and manage disease (Berhimpong et al., 2020). Hence, the researchers assumed that respondents with good self-awareness and behaviour are more capable of performing optimal self-management.

When spirituality levels were correlated with self-management, differences in the strength of correlation were observed among post-stroke patients at 1, 2, and 3 months, with the highest correlation occurring at 2 months post-stroke. However, the difference was relatively small (0.037–0.115). After two months post-stroke, patients begin to experience positive effects from higher spirituality, such as reduced anxiety and depression, improved quality of life, and increased adherence to treatment and rehabilitation regimens. During this period, patients are generally more motivated to engage in effective self-management, as spirituality provides them with meaning and strength to continue their recovery. Spiritual support enhances patients' coping abilities, improving quality of life and physical function after stroke (Ambrosca et al., 2024). At three months post-stroke, the body undergoes significant inflammatory and physiological changes, requiring more intensive self-management. The relationship between spirituality and self-management becomes increasingly evident, as spirituality helps patients sustain motivation and resilience throughout rehabilitation (Suyanto et al., 2022).

Spirituality is an essential aspect in the search for life's meaning and purpose, reflecting one's connection with oneself, others, and God. A high level of spirituality among post-stroke patients serves as a crucial foundation for supporting effective self-management. Spirituality helps patients accept their condition, reduce anxiety and depression, increase resilience, and provide motivation and inner peace. Integrating spiritual care interventions into stroke rehabilitation programs can enhance patients' ability to manage their condition independently, thereby accelerating recovery and improving overall quality of life (Ratna, 2019). Religious adaptation strategies, such as prayer, meditation, and participation in religious activities, can help stroke patients overcome physical and emotional challenges. Several studies have shown that patients with strong spiritual attachment manage pain, anxiety, and depression more effectively than those with lower spirituality (Suyanto et al., 2022). High spirituality offers adaptive coping support that strengthens patients' motivation and inner peace, enabling them to engage in effective self-management. With intense spirituality, patients are more capable of accepting their condition, reducing anxiety and depression, and maintaining an optimistic attitude that promotes consistency in carrying out self-management (Suyanto et al., 2022). This study conducted measurements at only one point in time, which does not fully represent the overall condition of post-stroke patients. In addition, the study only included patients who were 1–3 months post-stroke and attended hospital follow-up visits; thus, it may not reflect the condition of post-stroke patients who were more than three months post-stroke.

CONCLUSION

There is an association between the level of spirituality and self-management in post-stroke patients. A high level of spirituality in post-stroke patients contributes positively to good self-management. Both aspects support each other in the recovery process, where spirituality provides psychological strength and motivation, while self-management reflects the patient's practical ability to manage their health condition. Therefore, interventions that enhance spirituality during the post-

stroke recovery phase are needed to improve the effectiveness of self-management, thereby increasing life expectancy and quality of life among post-stroke patients.

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