The Influence Functional Status on The Quality Life Post Patients Stroke

Tiur Romatua Sitohang[1]*, Herlina Evi Yanti Manik[2]

[1,2] Politeknik Kesehatan Kementerian Kesehatan Medan

Email korespondence: tiursitohang61@gmail.com

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Abstract

Stroke is a functional brain disorder that occurs suddenly and is characterised by clinical symptoms both vocal and global which persist for a period exceeding 24 hours. These symptoms are caused by disorders affecting the blood circulation system. In patients who have suffered a stroke can result in difficulties for carrying out activities of daily living and in the development of motor skills. The research design was a correlational observational study with a cross-sectional approach. The study sample comprised 30 post-stroke patients. Inclusion criteria were patients post-stroke one year or more, seeking outpatient treatment at the Neurology Clinic from June to August 2024. Sampling was conducted using the purposive sampling technique. Spearman rho test for bivariat analysis is used to assess the impact of functional status on the quality of life of post-stroke patients. The research instrument was a questionnaire. The Functional Status Questionnaire employs the Barthel Index scale. The respondent indicated that they were fully independent. The quality of life questionnaire employs the Short Form Stroke-Specific Quality of Life Scale (SSQOL). P-value for the spearman correlation test is 0.046 (<0.05) indicates that there is a statistically significant influence between functional status and the patient's quality of life. The correlation coefficient value is r=0.368, indicating that the influence between functional status and quality of life is moderate to strong. These positive results indicate that as an individual's functional status improves, so does their quality of life one year after stroke. Consequently, the functional status of these patients can be improved through stroke rehabilitation, which is designed to enhance quality of life.

Keywords: Functional Status, Stroke, Quality of Life

INTRODUCTION

Stroke is defined as a functional brain disorder that occurs suddenly and is characterised by clinical symptoms, both focal and global, which persist for more than 24 hours. These symptoms are caused by blood circulation disorders (WHO in Imran et al., 2020). It is estimated that 12.2 million individuals worldwide experience a stroke annually. The global annual stroke mortality rate is reported to be 6.5 million (Davies & Delcourt, 2021). Furthermore, it has a high morbidity rate, with chronic disability occurring in up to 50% of cases. The annual mortality rate is estimated to be 5.5 million. A notable consequence of stroke for patients is a marked reduction in their independence, manifesting as difficulties in performing routine activities of daily living and an increased risk of cognitive impairment (Donkor, 2018).

The occurrence of paralysis or weakness of the limbs in post-stroke patients will inevitably give rise to difficulties in fulfilling their activities and motor skills, thereby rendering them dependent on others (Kim et al., 2016). This dependence on others has emerged as a

pivotal factor contributing to the long-term economic burden for stroke patients (Majersik & Woo, 2020). It is therefore imperative to address the disability and associated complications caused by stroke and to enhance individuals' functional abilities and level of independence (Lui & Nguyen, 2018).The ability to perform activities of daily living is a fundamental aspect of human physiology (Robby & Selpiyanti, 2019).

The term "post-stroke syndrome" is used to describe a set of symptoms that may manifest in individuals who have experienced a stroke. One of the most frequently observed symptoms is a change in the patient's functional status. The functional status of post-stroke patients pertains to their capacity to undertake the activities of daily living, including personal care (e.g., bathing, dressing, and eating) and mobility. The level of functional status can be evaluated through the utilisation of a range of assessment tools, including the Barthel Index and the Modified Rankin Scale. The assessment of functional status is of great importance in determining the level of disability and the necessity for rehabilitation in post-stroke patients (Athiutama & Trulianty, 2021).

In evaluating the functional status of post-stroke patients, the ability to perform activities of daily living (ADL) is assessed, including activities such as bathing, dressing, eating and walking. The extent of muscle strength that can attributed to rehabilitation compliance is a significant predictor of long-term changes in muscle strength in post-stroke patients. The degree of functional independence in survivors of stroke is associated with the level of family assistance and support they receive. Quality of life is associated with changes in functional status. An elevated functional status will have a greater impact on the patient's quality of life (Dharma et al., 2020).

A decline in quality of life is a common occurrence among post-stroke patients. It is estimated that nearly half of all patients who have experienced a stroke will continue to experience persistent neurological deficits, which can have a significant impact on their social and economic functioning. The quality of life of post-stroke patients is inferior to that which they enjoyed prior to the stroke. Psychological issues that may arise following a stroke include depression, anxiety, emotional lability and post-traumatic stress disorder. The majority of stroke survivors report a reduction in their engagement in recreational and social activities upon returning home, which can also have an adverse impact on their quality of life. Stroke is regarded as a significant contributor to disability and loss of independence in humans. Hemi-paralysis, a common consequence of stroke, can result in significant restrictions in activities of daily living (ADL) (Darussalam & Nugraheni., 2021).

A stroke can affect many aspects of a patient's life. Post-stroke patients quality of life can be affected by physical and mental disability. These factors contribute to a decline in quality of life following a stroke (Chen Q et al., 2019; Hafdia, in Kurnia & Idris, 2020).
A number of studies have investigated the relationship between functional status and quality of life in post-stroke patients. One such study was conducted by Qothrunnadaa, 2019 in (Putri et al., 2023) which demonstrated a significant correlation between functional status and quality of life in post-ischemic stroke patients. The correlation was found to be extremely strong, with a correlation coefficient (r) of 0.931 and a p-value of 0.000. The findings of Lestari (2018) study indicated a correlation between the level of independence and the quality of life of post-stroke patients. The objective of this study is to ascertain the influence of functional status on the quality of life of post-stroke patients.

The preliminary survey conducted by researchers at Hospital X of 5 post-stroke patients who had suffered within one year yielded the following results: 60% of the patients exhibited moderate functional status, while 40% demonstrated low functional status. In terms of quality of life, 40% of patients are classified as having a high quality of life, 40% have a medium quality of life, and 20% have a low quality of life. Based on these findings, the researchers sought to analyse the impact of functional status on post-stroke patients' quality of life

METHODS

The research design employed was a correlational observational approach with a cross-sectional component, which sought to ascertain the impact of functional status on the quality of life of post-stroke patients. In instances where data collection or measurements are conducted concurrently, the objective is to observe both variables simultaneously. The study population comprised 125 post-stroke patients who sought treatment at the RSU X Neurology Polytechnic. The study sample comprised 30 individuals who sought treatment at the RSU. To be included in the study, participants had to meet the following criteria: they had to be post-stroke patients with a minimum of one year's post-stroke duration. This is particularly the case in the late adult years. Those who were unwilling to participate as respondents were excluded from the study.

The instrument utilized to assess functional status is the Barthel Index questionnaire, which comprises 10 evaluation items with a scoring range of 0-10 for each item. A score of 0-20 indicates total dependence, 21-61 denotes severe dependence, 62-90 signifies moderate dependence, and 91-99 represents light dependence. The subject is deemed to be independent with a score of 100. The quality of life questionnaire employs the Short Form Stroke-Specific

Quality of Life Scale (SSQOL), comprising 12 items on a Likert scale (1-4). A high quality of life is indicated by a score of 36-48, a medium quality of life by a score of 24-35, and a low quality of life by a score of 12-23. The Barthel Index questionnaire has been demonstrated to possess excellent validity and reliability, and is capable of detecting changes in patients undergoing assessment. The psychometric test of Barthel's index on stroke patients conducted by Hsueh, Lee, and Ching (2001) demonstrated excellent construct validity. Construct validity, as measured by internal consistency, yielded an alpha score of 0.94, with scores for each domain ranging from 0.89 to 0.92. The SSQOL-12 instrument has been subjected to a prior examination of its construct validity and reliability by the researcher Dharma (2015). The results of the validity test for the SSQOL-12 item instrument indicate that all question items are valid, with a validity score ranging from 0.393 to 0.717 (r>0.30). Meanwhile, the reliability test of the SSQOL-12 item instrument yielded a Cronbach alpha value of 0.882. The aforementioned results indicate that the SSQOL-12 items are an instrument with good reliability, thereby allowing for its use in measurement.

The data analysis entailed the utilisation of univariate frequency distributions for variables such as gender, age, employment status, education, functional status, and quality of life. Bivariate analysis employs the Spearman's rho statistical test with a significance level of < 0.05 to examine the impact of functional status on the quality of life of post-stroke patients. The level of correlation strength is categorized by: Correlation coefficient value of 0.00 – 0.25 = very weak relationship. The correlation coefficient value is 0.26 – 0.50 = sufficient relationship. The correlation coefficient value is 0.51 – 0.75 = strong relationship. The correlation coefficient value is 0.76 – 0.99 = very strong relationship. The correlation coefficient value is 1.00 = perfect relationship.

RESULTS

Based on the research findings, the majority of respondents who are 1 year post-stroke are male, accounting for 73%. The majority of these stroke patients, 86.7%, are married. Additionally, 86.6% of the respondents have a high school education. Furthermore, 50% of the stroke patients are unemployed.

Table 1. Demographic Characteristics of Respondents (one year post stroke)

Variable	F	%
Gender		
Male	22	73
Female	8	27
Age		
Late Adulthoot	2	6,7
Early Elderly (46-55)	3	10
Late Elderly (56-65)	22	73,3
Seniors > 65	3	10
Marutal Status		
Widow	4	13,3
Married	26	86,7
Education		
Junior High School	0	0
Senior High School	28	86,6
High Education	2	13,4
Occupation		
Unemployed	15	50
Private Sector	13	43
Retired	2	7

Based on the research findings, the majority of the respondents who are 1 year post-stroke have a moderate functional status, accounting for 53.3%. Additionally, 53.3% of the stroke patients have a high quality of life

Table 2. Frequency distribution of the quality of life and functional status of patients with stroke within one year

Variable	F	%
Functional Status		
Fully Dependent	0	0
Heavily Dependent	9	30
Moderately Dependent	16	53,3
Lightly Dependent	0	0
Independen	5	16,7
Quality of life		
High	16	53,3
Moderate	11	36,7
Low	3	10

Table 3. The Influence of Functional Status on the Quality of Life of Post-Stroke Patients

		Functional status	Quality of life
Spearman's rho functional status	Correlation coefficient	1.000	0.368
	Sig (2 - tailed)		0,046

Based on Table 3, the results of the Spearman correlation test indicate a significance value of 0.046, meaning there is a significant influence between functional status and the quality of life of patients 1 year post-stroke. The correlation coefficient is r = 0.368, which indicates a strong relationship between functional status and quality of life. This positive result suggests that as an individual's functional status improves, their quality of life also increases.

DISCUSSION

The research findings indicated that the majority of respondents were male (73%). This finding is consistent with the findings of (Alotaibi et al., 2021), who reported that 57.5% of stroke patients were male. Similarly, Zhou et al., (2022) reported that 68.58% of stroke patients were male. The findings of the research conducted by Vellyana & Rahmawati (2021) indicate that there is a higher prevalence of stroke among males compared to females. This can be attributed to the fact that women have a greater capacity for protection from cardiovascular disease and stroke until middle age, as a consequence of the hormone oestrogen that is produced in their bodies.

The results of this study also indicate that the primary age group represented by the respondents is one year after experiencing a stroke, were within the 56-65 years old, representing 73.3% of the total sample. The findings of this study are in accordance with those reported by Ariyanti et al. (2023) who identified the characteristics of post-stroke patients based on age, with a maximum of 44-60 years, and a total of 60 individuals (74.1%). Furthermore, the findings of Vellyana & Rahmawati (2021) substantiate the well-established evidence that age is an influental risk factor for stroke. Age represents the most significant risk factor, with an estimated two- to three-fold increase in risk every ten years after the age of 50. This may be attributed to the capacity of blood vessels to expand and contract in response to changes in pressure or volume. This finding is consistent with the results of a study conducted by Bariroh et al. (2022), which indicated that individuals aged 55 and above are at an elevated risk of experiencing a stroke. Age-related changes, such as those affecting the general vascular system, include the inelasticity of the brain's blood vessels and the presence of plaque in the brain's arteries that persists for years. The functional incapacity resulting from a stroke can

have a direct or indirect repercussion on the quality of life of the patient in the period following the stroke.

The findings of the research indicated that, one year after suffering a stroke, the majority of respondents (53.3%) exhibited moderate functional status, while the majority of stroke patients (also 53.3%) reported high quality of life. Stroke represents a pathological process affecting the brain. This disease is particularly dangerous because the brain is a vital organ that controls all body functions. A stroke results in the dysfunction of the motor organs in the human body (Ridwan in Sutejo et al., (2023). Patients who have experienced a stroke often experience a loss of functionality in various domains, including social, emotional, and physical (Abdu et al., 2022). This can give rise to disturbances in their daily activities. The ability to perform activities of daily living is a fundamental aspect of human physiology. Stroke patients typically require assistance from others to perform activities and self-care tasks, including bathing, toileting, eating, drinking, dressing, personal hygiene, ambulation, and mobility (Junaidi in Robby & Selpiyanti (2019).

This description of functional status is derived from the results of an assessment of the patient's capacity to perform self-care and mobility-related activities. The aforementioned activities are evaluated through the utilisation of a rating scale, namely the Barthel Index. The Barthel index is frequently employed due to its capacity to discern alterations in a patient's capacity to perform activities. Accordingly, the Barthel index may be employed to quantify the degree of daily physical activity exhibited by stroke patients (Fandri et al., 2014). Stroke is the primary cause of long-term disability. The elevated prevalence of disability due to stroke is attributable to cerebral tissue disorders that impede the ability to perform daily activities, mental and emotional disorders, and diminished productivity. Consequently, this condition exerts an influence on the quality of life (Fitriani & Mulyono, 2022).

The findings of this study align with those of Qothrunnadaa (2019) in Putri (2023) which revealed that the majority of respondents exhibited a moderate dependency functional status (83%) and a high quality of life (69%). The findings of this study are also consistent with those of Poomalai et al. (2023), who observed that among the patient cohort, 30% exhibited partial independence in functional status, 40% demonstrated high dependency, and 10% exhibited complete dependency. Of the 30 patients, only 3% were classified as independent, while 17 patients exhibited some degree of independence. The mean Barthel Index score is 43.5, indicating that the level of dependency is higher in men than in women. Robby & Selpiyanti (2019) asserted that a prevalent disability among stroke patients is paralysis or weakness on one side of the body, which can precipitate functional disorders. The

term "functional status" is used to describe an individual's ability to perform activities of daily living, including self-care, self-maintenance, and physical activity. The researchers' analysis revealed that the majority of respondents exhibited moderate functional status. Patients who have experienced a stroke often present with paralysis or weakness on one side of the body, which can significantly impair their ability to perform daily activities independently. This often leads to a reliance on others for assistance.

The research findings also indicated that the majority of patients exhibited a high quality of life one year after experiencing a stroke, with a prevalence of 53.3%. Stroke can impact a patient's life in a multitude of ways, including physical, emotional, psychological, cognitive, and social domains. The extent of physical and mental limitations experienced by post-stroke patients can have a considerable impact on their quality of life. A stroke can result in a loss of independence for the patient, necessitating assistance with activities of daily living such as eating, drinking, bathing, dressing and toileting. The diminished level of independence and mobility experienced by stroke survivors can have adverse effect on their quality of life (Ngatini in Fitriani & Mulyono, 2022). Stroke is the primary cause of long-term disability, which can result in the inability to engage in the activities that comprise one's typical day-to-day routine and has an adverse impact on quality of life (Kurnia & Idris, 2020). The quality of life of individuals who have experienced a stroke is assessed using the SS QoL instrument. Quality of life indicators encompass self-care, physical mobility, language, vision, work, and an evaluation of one's condition, including cognitive abilities, familial and social roles, personality, mood, and energy.

This finding is consistent with that reported by Qothrunnadaa (2019) in Putri et al., (2023), who also reported that 69% of post-ischemic stroke patients had a high quality of life, and 31% had a moderate quality of life. Suhut (2020) posits that quality of life is a state in which the patient's illness does not impinge upon their physical, psychological, social or spiritual comfort, and in which they are able to optimally utilise their life for the happiness of themselves and others. Bártlová et al., (2022) posited that the quality of life of post-stroke patients declines with age.

The results of the Spearman correlation test indicate a significance value of 0.046, which suggests that there is a notable influence between functional status and the patient's quality of life one year following a stroke. The correlation coefficient, r, is 0.368, indicating a moderate to strong relationship between functional status and quality of life. These positive results indicate that as individuals' functional status improves, their quality of life also improves.

However, these findings are not aligned with those of Zhou et al., (2022), who observed that patients with a disease duration of more than 12 months exhibited an almost twofold increased risk of poor functional status (OR = 1.72, 95% CI: 0.97–3.07) compared to those with a disease duration of 12 months or less.

This finding is also consistent with the findings of (Qothrunnadaa, 2019 in Putri, 2023), where Spearman correlation analysis yielded a significance value (p-value) of 0.000 and a correlation coefficient (r) of 0.931. This demonstrates a significant relationship between functional status and quality of life in patients who have experienced an ischaemic stroke, with a very strong correlation strength. The clinical manifestations that may manifest in the physical, psychological, and social aspects of post-stroke patients require expeditious and suitable treatment during the rehabilitation phase, which has an impact on quality of life. Restrictions in physical, cognitive and social capabilities may result in a reduction in quality of life.

The findings of this study indicate that functional status exerts an influence on the quality of life of post-stroke patients. Consequently, patients' functional status can be enhanced through the implementation of an effective stroke rehabilitation programme. Such a programme is designed to improve health-related quality of life, thereby enabling patients to achieve their life goals and to attain a state of optimal wellbeing for themselves and for their families. Nurses play a pivotal role in the rehabilitation of stroke patients during the convalescent period. The primary objective of the interventions that nurses can provide to restore a patient's functional status is to facilitate the acquisition of knowledge (education) and physical rehabilitation interventions, with the aim of increasing independence and preventing complications and repeat strokes, as well as improving quality of life. In addition, nurses provide education to patients and families, emphasising the significance of comprehensive care encompassing physical, psychological, emotional, cognitive, spiritual and social aspects. The educational programme encompasses the dissemination of knowledge and training to families regarding the care of patients at home. This includes instruction on nutritional management, exercise and movement management. Additionally, nurses furnish patients and their families with information regarding the acquisition of rehabilitative services and offer emotional support to patients and their families. It is anticipated that interventions by nurses which are designed to enhance functional status in patients who have suffered an ischaemic stroke will have a beneficial impact on the quality of life of the patient.

A limitation of this research is the relatively small sample size, comprising only 30 individuals. Furthermore, the potential influence of age, gender, education, employment status and marital status on the patient's quality of life was not investigated. Furthermore, the analysis

did not exclude respondents who underwent physical rehabilitation, despite the potential for such treatment to significantly impact the development of physical function in post-stroke patients. The statistical tests conducted were univariate and bivariate.

CONCLUSION

The results of the Spearman correlation test indicate a significance value of 0.046, which suggests that there is a notable influence between functional status and the patient's quality of life one year after a stroke. The correlation coefficient is r = 0.368, indicating a moderate to strong relationship between functional status and quality of life. These positive outcomes suggest that as individuals' functional status improves, their quality of life also improves. The findings of this study indicate that functional status exerts an influence on the quality of life of post-stroke patients. Consequently, patients' functional status can be enhanced through the implementation of an effective stroke rehabilitation programme. Such a programme is designed to improve health-related quality of life, thereby enabling patients to achieve their life goals and to attain a state of optimal wellbeing for themselves and for their families. Nurses play a pivotal role in the rehabilitation of stroke patients during the convalescent period.

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