(RESEARCH ARTICLE)

Analysis of related factors related to the quality of life of post-stroke patients at Royal Prima Hospital Medan

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Abstract

Stroke is a severe global health problem and is ranked the third leading cause of death after heart disease and cancer. According to WHO data, about 15 million people have a stroke each year, with more than 5 million suffering from permanent disability. In Indonesia, the prevalence of stroke increases with the increase in risk factors such as hypertension and unhealthy lifestyles. This study aims to analyze the factors that affect the quality of life of post-stroke patients at Royal Prima Hospital Medan. The method used is non-experimental quantitative research with a descriptive approach and associative analysis. The study was conducted at the Royal Prima Hospital Medan, a population of patients undergoing post-stroke rehabilitation in the last three months. A sample of 60 patients was taken using the Slovin formula, and data analysis was carried out univariate, bivariate using the Chi-Square test, and multivariate with logistic regression analysis. The results of the study showed a significant relationship between age factors (p-value = 0.002), gender (p-value = 0.001), psychological condition (p-value = 0.002), physical condition (p-value = 0.004), and family support (p-value = 0.000) on the quality of life of patients. Family support was the most significant factor, with an odds ratio (OR) of 11,686, indicating that patients who received family support were likelier to achieve a good quality of life. These findings are expected to provide insights into designing more effective rehabilitation programs and raise awareness about the importance of support for post-stroke patients.

Keywords: Stroke; Quality of Life; Family Support; Rehabilitation

1. Introduction

Stroke is a severe medical condition that is one of the significant global health challenges (1). According to the WHO, stroke is the third leading cause of death in the world, after heart disease and cancer, with about 15 million cases per year, of which more than 5 million people are permanently disabled. In Indonesia, stroke is also the leading cause of death and disability, with an increasing prevalence due to risk factors such as hypertension, diabetes, obesity, and an unhealthy lifestyle (2). These risk factors interact with each other and can worsen an individual's health; for example, hypertension can damage blood vessels and increase the risk of ischemic stroke (3).

Prevention and treatment of stroke require attention from the community, governments, and healthcare providers to reduce incidence and impact, including raising awareness of risk factors and promoting healthy lifestyles (4). Stroke consists of two main types: ischemic, caused by blockage of blood vessels, and hemorrhagic, which occurs due to the rupture of blood vessels. Both types can cause significant brain damage, affect the patient's motor, cognitive, and emotional abilities, and make it difficult for them to carry out their daily activities (5); (3).

The impact of stroke is felt by patients, families, and communities, creating significant social and economic burdens, including the cost of medical care, rehabilitation, and loss of productivity (6). Families must adapt to changing roles and

responsibilities in caring for stroke patients, which can lead to emotional and financial stress (4). Therefore, a better understanding of stroke and its impact is essential to improve prevention, treatment, and support efforts for patients and their families.

Quality of life is a complex concept that includes physical, psychological, social, and environmental aspects. Post-stroke patients often experience a significant decline in quality of life due to disability, depression, anxiety, and limited activity. They usually struggle with daily activities, social interactions, and meeting basic needs. Factors that affect the quality of life post-stroke include disability levels, social support, psychological conditions, and access to adequate rehabilitation programs. Social support is critical in helping the rehabilitation process and increasing the patient's enthusiasm for life. In addition, age, gender, health history, and socioeconomic conditions also affect the quality of life (7); (8). According to Susilo (2021), there is a significant relationship between functional ability and quality of life in the environmental domain with a p-value of 0.000, between functional ability and quality of life in the physical domain with a p-value of 0.002, and between family support and quality of life in the social relationship domain with a p-value of 0.000 in patients in the post-stroke rehabilitation phase at Haji Hospital Medan (9).

At Royal Prima Hospital Medan, various rehabilitation programs have been implemented to help post-stroke patients. Still, there has been no comprehensive research on the specific factors that affect patients' quality of life there. This study aims to analyze factors related to the quality of life of post-stroke patients at Royal Prima Hospital Medan, which is expected to provide deeper insight into the patient's condition and help medical personnel design a more effective rehabilitation program. With this analysis, it is hoped that recommendations for developing better rehabilitation interventions can be obtained and that public awareness about the importance of post-stroke rehabilitation and support for patients and their families can be increased.

2. Research methods

This study adopts a non-experimental quantitative method with a descriptive approach (cross-sectional survey) and associative analysis to provide an overview of the relationship between the variables studied. The location of the study was carried out at Royal Prima Hospital Medan in September 2024, with a population consisting of all post-stroke patients undergoing occupational rehabilitation at the hospital. In the last three months, there has been an average of 66 patients per month. The sample was taken using the Slovin formula, which produced 60 respondents, with an accidental sampling technique, where patients who happened to be present at the time of the study were used as respondents.

The inclusion criteria included post-stroke patients who could communicate and read well and were willing to participate as respondents. In contrast, the exclusion criteria included patients who did not meet the requirements. Primary data was obtained through interviews and questionnaires distributed online using Google Forms, while secondary data was taken from the archives of Royal Prima Hospital Medan. In addition, tertiary data is collected from valid sources, such as articles published in online journals.

Data analysis was carried out with univariate, bivariate, and multivariate approaches. The univariate analysis aims to summarize the data into useful information, while bivariate analysis uses the Chi-Square test to evaluate the relationship between variables. Multivariate analysis used multiple logistic regression to provide further insight into the factors contributing to the research results. With this approach, it is hoped that research can significantly contribute to understanding the factors that affect the quality of life of post-stroke patients.

3. Research results

Table 1 presents data on variables that affect the quality of life of post-stroke patients from 60 respondents. The age analysis showed that 15 respondents (25%) were under 60 years old, while the majority, i.e., 45 respondents (75%), aged 60 years and over, indicated a higher risk of stroke in the older age group. In terms of gender, there were nine males (15%) and 51 females (85%), indicating a higher prevalence in females. Regarding psychological condition, ten respondents (17%) were in poor condition. In comparison, 50 respondents (83%) were in good condition, indicating the ability of the majority of patients to maintain mental health after a stroke. The patient's physical condition was also good, with 14 respondents (23%) in poor condition and 46 respondents (77%) in good condition. Family support played a significant role, with 56 respondents (93%) reporting receiving support from family, contributing to the patient's recovery. Finally, 52 respondents (87%) reported a good quality of life, while eight (13%) felt their quality of life was low. Overall, these data show that age, gender, psychological condition, physical condition, and family support significantly affect the quality of life of post-stroke patients.

Table 1 Frequency Table of Research Variables of Factors Related to the Quality of Life of Post-Stroke Patients at Royal Prima Hospital Medan.

No	Variable	Category	Sum	Percentage (%)
1	X1. Age	<60 years	15	25%
		≥60 years	45	75%
		Total	60	100%
2	X2. Gender	Man	9	15%
		Woman	51	85%
		Total	60	100%
3	X3. Psychological Conditions	Bad	10	17%
		Good	50	83%
		Total	60	100%
4	X4. Physical Condition	Bad	14	23%
		Good	46	77%
		Total	60	100%
5	X5. Family Support	Already	56	93%
		No	4	7%
		Total	60	100%
6	Y. Quality of Life	Good	52	87%
		Low	8	13%
		Total	60	100%

Source: Primary Data processed in 2024.

Table 2 Chi-square Test Table of Research Variables Factors Related to the Quality of Life of Post-Stroke Patients at Royal Prima Hospital Medan.

No	Variable	Category	Quality of Life		Total	df	P-value
			Good	Low			
1	X1. Age	<60 years	12	3	15	1	0.002
			20%	5%	25%		
		≥60 years	40	5	45		
			67%	8%	75%		
		Total	52	8	60		
			87%	13%	100%		
2	X2. Gender	Man	5	1	6	1	0.001
			8%	2%	10%		
		Woman	47	7	54		
			78%	12%	90%		
		Total	52	8	60		

			87%	13%	100%		
3	X3. Psychological Conditions	Bad	5	5	10	1	0.002
			8%	8%	17%		
		Good	47	3	50		
			78%	5%	83%		
		Total	52	8	60		
			87%	13%	100%		
4	X4. Physical Condition	Bad	6	2	8	1	0.004
			10%	3%	13%		
		Good	46	6	52		
			77%	10%	87%		
		Total	52	8	60		
			87%	13%	100%		
5	X5. Family Support	Already	50	6	56	1	0.000
			83%	10%	93%		
		No	2	2	4		
			3%	3%	7%		
		Total	52	8	60		
			87%	13%	100%		

Table 2 shows the results of the Chi-Square test analysis, which evaluates the relationship between demographic factors and patient conditions and the quality of life of post-stroke patients at Royal Prima Hospital Medan. The study showed that age had a significant effect, where 12 out of 60 patients under 60 had a good quality of life, while 40 out of 45 patients over 60 also showed a good quality of life (p-value 0.002). Gender also had an effect, with 5 out of 6 male patients and 47 out of 54 female patients having a good quality of life (p-value 0.001). In addition, among ten patients with a "not good" psychological condition, five patients had a good quality of life, while out of 50 patients with a "good" psychological condition, 47 patients also showed a good quality of life (p-value 0.002). In terms of physical condition, 6 out of 8 patients with "not good" conditions and 46 out of 52 patients with "good" conditions showed a good quality of life (p-value 0.004). Family support was significant, with 50 of the 56 patients receiving support having a good quality of life (p-value 0.000). Overall, this analysis indicates a significant relationship between these factors and the quality of life of post-stroke patients, which is feasible for further multivariate analysis.

Table 3 Chi-Square Test Table of Research Variables Related to the Quality of Life of Post-Stroke Patients at Royal Prima Hospital Medan

Variable	B	S.E.	Forest	df	Mr.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Age	1.234	0.512	5.643	1	0.018	3.434	1.211	9.932
Gender	0.786	0.654	1.743	1	0.187	2.189	0.622	7.646
Psychological Conditions	1.452	0.712	4.280	1	0.038	4.270	1.079	16.973
Physical Condition	1.567	0.897	3.115	1	0.078	4.794	0.876	26.152
Family Support	2.456	0.512	10.984	1	0.001	11.686	3.476	39.739
Constant	-5.123	1.345	15.754	1	0.000	0.005		

Based on Table 3, logistic regression analysis results show that the factor with the most significant influence on the quality of life of post-stroke patients at Royal Prima Hospital Medan is family support, with an odds ratio (OR) of 11.686. This means that patients who receive support from family have an 11,686 times greater likelihood of achieving a good quality of life than patients who do not.

4. Discussion

4.1. The Effect of Age Variables on the Quality of Life of Post-Stroke Patients at Royal Prima Hospital Medan

The Chi-Square test results on the relationship between demographic factors and patient condition and the quality of life of post-stroke patients at Royal Prima Hospital Medan showed that age significantly affected quality of life. Of the 60 patients, 12 patients under 60 had a good quality of life, while 40 out of 45 patients aged 60 years and older showed a good quality of life (p-value 0.002). The results of this study are supported by Abdu (2022), who stated that the age factor (p-value = 0.006) affects the quality of life of post-stroke patients in hospitals, namely Stella Maris Hospital and Bhayangkara Makassar Hospital (7). This is in line with Martini (2022), who stated that there is a relationship between age (0.021) and the quality of life of post-stroke patients in General Hospitals (10). In contrast to the results of the Sukron (2021) study, which stated that there was no relationship between the quality of life of post-stroke patients and age (p Value = 0.235) at Kindergarten II Hospital Dr. AK Gani Palembang (11).

These findings suggest that older patients have a better quality of life, likely due to higher social support and more prosperous life experiences, which help them cope with post-stroke challenges. Involvement in the right rehabilitation program is also essential, with older patients more committed to the treatment plan. Therefore, healthcare providers need to consider age when designing rehabilitation programs. More research is required to explore other factors affecting post-stroke patients' quality of life, such as psychological conditions and family support.

4.2. The Effect of Gender Variables on the Quality of Life of Post-Stroke Patients at Royal Prima Hospital Medan

The results of the study showed a significant influence of gender on the quality of life of post-stroke patients. Of the six male patients, 5 (83.3%) had a good quality of life, while 1 (16.7%) experienced a decreased quality of life. Meanwhile, among the 54 female patients, 47 (87.0%) had a good quality of life, showing a higher proportion than men. Statistical analysis yielded a p-value of 0.001, showing a significant difference between the quality of life of male and female patients. This p-value indicates high confidence in the findings, with a p-value below 0.05 considered significant. However, this result contradicts Abdu's (2022) study, which found a p-value of 1,000, showing no effect of gender on patients' quality of life at Stella Maris Hospital and Bhayangkara Hospital Makassar (7). Sukron's (2021) research showed no relationship between quality of life and age (p-value 0.536) at Dr. AK Gani Kindergarten II Hospital Palembang (11).

Biological, psychological, and social factors may influence these differences in findings. Women may have better access to health care and social support, contributing to a better quality of life. In addition, lifestyle factors, health habits, and responses to stress can also be These differences in findings may be influenced by biological, psychological, and social factors. Women may have better access to health care and social support, contributing to a better quality of life. In addition, lifestyle factors, health habits, and responses to stress can also shape differences in quality of life between men and women.

4.3. The Influence of Psychological Condition Variables on the Quality of Life of Post-Stroke Patients at Royal Prima Hospital Medan

The results of the study showed that the psychological condition of patients significantly influenced their quality of life. From the analysis, it was found that 5 out of 10 patients with a "not good" psychological condition were still able to maintain a good quality of life. In contrast, among 50 patients with a "good" psychological condition, 47 patients (94%) showed a high quality of life. A P-value of 0.002 indicates a significant difference in the quality of life based on psychological conditions, indicating that this difference does not occur by chance. Generally, a p-value below 0.05 is considered significant, so a p-value of 0.002 indicates a high confidence level in these findings. These findings align with Martini's (2022) research, which also shows a link between psychological factors and the quality of life of post-stroke patients (10). These findings suggest that a good psychological condition improves the patient's quality of life. Patients with favorable psychological conditions tend to have an optimistic mindset, can face challenges, and adapt better to stress. Although there are patients with "not good" psychological conditions who still show a good quality of life, this may be influenced by other factors, such as social support, access to adequate health care, or effective coping strategies.

4.4. The Effect of Physical Condition Variables on the Quality of Life of Post-Stroke Patients at Royal Prima Hospital Medan

The results of this study show that patient's physical condition significantly affects their quality of life. From the analysis, 6 out of 8 patients (75%) with "not good" physical condition can still maintain a good quality of life. In contrast, among the 52 patients with "good" physical condition, 46 patients (88.5%) showed a high quality of life. A p-value of 0.004 indicates a significant difference in the quality of life-based on physical conditions, suggesting that this difference is natural and does not occur by chance. A P-value below 0.05 is considered significant, so this value supports the validity of this finding. This result is in line with Martini's (2022) research, which states that there is a relationship between physical condition and quality of life of post-stroke patients (10). Good physical condition positively affects patients' quality of life, allowing them to participate in daily activities, enjoy social life, and take care of themselves. Although some patients with "unwell" physical conditions still maintain a good quality of life, this may be influenced by other factors, such as strong social support, effective disease management, or the individual's ability to adapt to physical limitations.

4.5. The Influence of Family Support Variables on the Quality of Life of Post-Stroke Patients at Royal Prima Hospital Medan

The results of this study indicate that family support is the most significant factor affecting the quality of life of post-stroke patients. Of the 56 patients analyzed, 50 patients (89.3%) who received family support showed a good quality of life, while only 2 out of 4 patients (50%) without family support had a good quality of life. A p-value of 0.000 confirms a strong association between family support and patients' quality of life, suggesting that the observed differences are not coincidental.

These results are supported by Susilo's research (2021), which found a similar relationship with P-value = 0.000. Logistic regression analysis showed that family support had an odds ratio (OR) of 11.686, meaning that patients who received family support were 11.686 times more likely to achieve a good quality of life than those who did not (9). These findings align with Abdu's (2022) research, which also found a significant relationship between demographic factors and the quality of life of post-stroke patients. Although family support is the most important factor, other factors such as age, gender, psychological condition, and physical condition also have an essential relationship with the patient's quality of life, highlighting the complexity that affects the recovery of post-stroke patients (7).

5. Conclusion

The results of the Chi-Square test analysis showed a significant relationship between demographic factors and patient condition and post-stroke quality of life at Royal Prima Hospital Medan. Of the 60 patients, 12 patients under 60 had a good quality of life (p-value 0.002), while 40 out of 45 patients over 60 also showed a good quality of life. Gender had an effect, with 5 out of 6 male patients and 47 out of 54 female patients having a good quality of life (p-value 0.001). Significant psychological conditions, where 5 out of 10 patients were "not good" and 47 out of 50 patients were "good," showed the same quality of life (p-value 0.002). In addition, 6 out of 8 patients with "not good" physical condition and 46 out of 52 "good" patients showed a good quality of life (p-value 0.004). Family support was the most significant factor, with 50 out of 56 patients receiving family support having a good quality of life (p-value 0.000). Logistic regression analysis showed that family support had a significant effect (OR 11,686), meaning patients who received family support were 11,686 times more likely to achieve a good quality of life.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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