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The Effectiveness of Structured Discharge Planning on Readiness for Discharge in Stroke Patients

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Abstract

Background: Stroke is one of the non-communicable diseases (NCDs) with a continuously increasing incidence rate worldwide and in Indonesia. The implementation of discharge planning for patients in hospitals has generally not been well-executed, including providing limited education for home preparation and inadequate information related to health management. This results in ineffective discharge planning and a lack of continuity of care when the patient is at home.

Objectives: This study aimed to determine the effect of structured discharge planning on home readiness in stroke patients in the hospital.

Methods: This quantitative research employed a quasi-experimental design with pre- and post-test comparisons between groups. A simple random sampling technique was used, with 16 respondents in the intervention group and 16 in the control group. Data collection was conducted from April to June 2022. The Readiness for Hospital Discharge Scale (RHDS) questionnaire was used as the measuring instrument. Data analysis was carried out using a dependent t-test and an independent t-test.

Results: The results indicated that structured discharge planning significantly affected the readiness to return home for stroke patients at Pasar Rebo Hospital Jakarta in both the intervention group (p-value 0.000) and the control group (p-value 0.000).

Conclusion: It was concluded that there was no decrease in value from before to after the administration of structured discharge planning in both the intervention and control groups.

Keywords: stroke, discharge planning, readiness to go home

Introduction

Stroke is one of the non-communicable diseases (NCDs) that continues to increase and imposes a significant burden both in developed and developing countries like Indonesia. Non-communicable diseases are those that cannot be transmitted to others and usually occur due to hereditary factors and unhealthy lifestyles.¹ The American Heart Association (AHA) states that the incidence of stroke each year reaches 795,000, with

approximately 610,000 being first attacks and 185,000 being recurrent attacks.² The World Health Organization (WHO) reports that in the United States, nearly 4 million people suffer from strokes, with the incidence of first-time strokes estimated at 400,000 people per year, many of whom experience disability as a result.³ Indonesia is among the countries with the highest number of stroke patients in the world. The Indonesian Ministry of Health, in its national report from the Basic Health Research (RISKESDAS), explains that the prevalence of stroke in Indonesia has increased compared to 2013, and based on doctors' diagnoses, the population over the age of 15 experiencing a stroke is 10.9% or approximately 2,120,362 people.⁴

Stroke patients are highly dependent on the people around them, particularly their family members, who are their closest support. The family plays a crucial role in the recovery process because they are most familiar with the patient's health condition and are a vital part of the recovery journey. Nurses also play a role in providing nursing care, including discharge planning.⁵ An effective discharge planning program is an active process that begins during hospital care to return the patient to the community. It aims to help patients regain their functional independence and return to an active and productive lifestyle.⁶ The discharge planning process must be conducted comprehensively and involve a multidisciplinary team, encompassing all healthcare providers involved in the patient's care. Nurses are a key part of this multidisciplinary team, holding an important position in patient care. They possess the competencies to conduct comprehensive assessments, manage the patient care process, and maintain effective therapeutic communication with patients and their families.⁷ Research by Sitompul et al. (2020) shows that providing discharge planning improves the quality of life, knowledge, and readiness for home care, as well as increases stroke patients' satisfaction with their care and the health services provided.⁸ Patient readiness for discharge can be enhanced by increasing their knowledge (cognitive) about the disease, necessary treatments, and potential complications, and by changing attitudes (affective) and behaviors (psychomotor) of patients and their families. This helps them identify factors that may worsen the condition or speed up recovery and manage home care needs.⁹ Readiness can be measured using the Readiness for Hospital Discharge Scale (RHDS), developed by Weiss and Peacentine in 2006, which assesses personal status, knowledge, coping, and social support.¹⁰

The implementation of discharge planning for hospital patients generally consists only of a summary of the patient's condition, along with short information regarding follow-up appointments at the outpatient clinic, medications to be taken, and dietary recommendations and restrictions after the patient is discharged.¹¹ This approach leads to ineffective discharge planning and a lack of continuity of care once the patient is at home. Consequently, patients may not feel prepared to return home. Currently, discharge planning remains the sole responsibility of nurses, without the involvement of a multidisciplinary team. Nurses provide discharge planning in an unstructured manner, without written guidelines, primarily to fulfill monitoring and evaluation requirements for inpatient quality indicators. This results in patients and families being unprepared for discharge, evidenced by their questions about home care and reasons for discharge despite the patient still needing care. To date, no research has been conducted to determine whether structured discharge planning improves patient readiness for discharge. This study aims to investigate the impact of structured discharge planning on the readiness for discharge in patients.

Methods

This study used a quasi-experimental research design with pre-test and post-tests between groups. The study consisted of two groups: the intervention group and the control group. This research aimed to determine the effectiveness of structured discharge planning on the readiness for discharge in stroke patients. In this study, the intervention was applied to the intervention group, while the control group only received general discharge planning.

The Effectiveness of Structured Discharge Planning on Readiness for Discharge in Stroke Patients

The differences in pre-test and post-test scores within each group were then observed. The population for this study consisted of stroke patients admitted to Jakarta Regional General Hospital, with a sample size of 32 respondents selected based on the application of G*Power. The sample was chosen using a simple random sampling technique. The instrument used in this study was the standard Readiness for Hospital Discharge Scale (RHDS) questionnaire. The RHDS questionnaire included 21 questions that measured patients' perceptions of their readiness for discharge from the hospital, covering four factors of discharge readiness: personal status (items 1 to 6), knowledge (items 7 to 14), coping ability (items 15 to 17), and support (items 18 to 21). This questionnaire was standardized with a Cronbach's Alpha value of 0.904.¹² Data analysis consisted of univariate analysis to examine the characteristics of the respondents and bivariate analysis to assess the impact of discharge planning on patient readiness for discharge. The statistical test used in this study was the Wilcoxon test, given that the assumption of normality was not met.

Results

Table 1. Characteristics of Respondents by Age, Gender, and Education Level in 2022

Characteristic	Control Group		Intervention Group	
	F	%	F	%
Age				
Productive (15-64 tahun)	14	87,5	12	75
Non-Productive (> 64 Tahun)	2	12,5	4	25
Total	16	100	16	100
Gender				
Male	7	43,8	12	75
Female	9	56,2	4	25
Total	16	100	16	100
Education Level				
Higher Education	12	74	10	62,5
Lower Education	4	25	6	37,5
Total	16	100	16	100

Based on the research results presented in [Table 1](#), the majority of respondents in the intervention group were in the productive age category (15-64 years), with 14 individuals (87.5%). In the control group, the majority of respondents were also in the productive age category (15-64 years), with 12 individuals (75%).

In terms of gender, among the 16 respondents in each group, the intervention group had more than half of the respondents being women, totaling 9 individuals (56.2%). In contrast, the majority of respondents in the control group were men, totaling 12 individuals (75%).

Regarding education level, the majority of respondents in the intervention group had higher education (senior high school, diploma, and bachelor's degree), totaling 12 individuals (75%). Similarly, in the control group, the majority of respondents had higher education, totaling 10 individuals (62.5%).

Table 2. Readiness for Discharge in Stroke Patients Before and After Structured Discharge Planning

Readiness for Discharge	Control Group				Intervention Group			
	Before		After		Before		After	
	F	%	F	%	F	%	F	%
Not Ready	7	43,8	7	43,8	8	50	7	43,8
Ready	9	56,2	9	56,2	8	50	9	56,2
Total	16	100	16	100	16	100	16	100

Based on the results presented in Table 2, the average readiness for discharge in stroke patients before structured discharge planning in the intervention group was 81.19, with a standard deviation of 9.304. In the control group, the average readiness for discharge before structured discharge planning was 74.56, with a standard deviation of 7.099. The difference in the average readiness for discharge between the two groups before structured discharge planning was 6.63.

Furthermore, the results show that the average readiness for discharge in stroke patients after structured discharge planning in the intervention group was 149.88, with a standard deviation of 15.086.

Table 3. Frequency Distribution of Readiness for Discharge in Stroke Patients Before and After Structured Discharge Planning

Group	Ranks	n	Mean Rank	Sum of Ranks	P-Value
Post-test vs. Pre-test Control Group	Negative Ranks	0	0,00	0,00	0,000
	Positive Ranks	16	8,50	136,00	
	Ties	0			
	Total	16			
Post-test vs. Pre-test Intervention Group	Negative Ranks	0	0,00	0,00	0,000
	Positive Ranks	16	8,50	136,00	
	Ties	0			
	Total	16			

Based on the results presented in Table 3 regarding the frequency distribution of patient readiness for discharge before and after structured discharge planning in both groups, it was found that the majority of patients in the control group were ready for discharge before the structured discharge planning, with 9 respondents (56.2%) ready and 7 respondents (43.8%) not ready. There was no change in readiness after structured discharge planning in the control group, with 9 respondents (56.2%) ready and 7 respondents (43.8%) not ready.

In contrast, in the intervention group, before structured discharge planning, 8 respondents (50%) were ready and 8 respondents (50%) were not ready. After structured discharge planning, there was an improvement, with 9 respondents (56.2%) ready and 7 respondents (43.8%) not ready.

Based on the one-way ANOVA test results presented in Table 4, it was found that the negative ranks or the negative difference in the readiness for discharge scores before and after structured discharge planning in the control group was 0 for the number (N), mean rank (0.00), and sum of ranks (0.00). This value of 0 indicates no decrease (reduction) in the scores from before to after the discharge planning. Meanwhile, for the positive ranks or the positive difference in readiness for discharge scores in the control group, there were 16 positive ranks (N), indicating that all 16 patients experienced an increase in their readiness for discharge scores from before to after structured discharge planning. The mean rank or average increase was 8.50, and the sum of ranks was 136.00. The result for ties was 0, indicating that there were no identical scores before and after structured discharge planning in the control group.

Similarly, in the intervention group, the negative ranks or the negative difference in readiness for discharge scores before and after structured discharge planning were 0 for the number (N), mean rank (0.00), and the sum of ranks (0.00). This indicates no decrease (reduction) in the scores from before to after the discharge planning.

Table 4. Influence of Confounding Factors (Age, Gender, and Education Level) on Patient Readiness for Discharge

Variable	Readiness for Discharge of Patients							
	Before				After			
	N	Mean	SD	P-Value	N	Mean	SD	P-Value
Age								
Non-Productive	4	70,75	1,500	0,052	4	115,50	16,340	0,550
Productive	12	75,83	7,814		12	109,83	9,824	
Gender								
Male	12	74,83	8,032	0,724	12	108,92	9,709	0,306
Female	4	73,75	3,775		4	118,25	14,841	
Education Level								
Higher Education	6	71,17	3,189	0,082	6	105,67	9,309	0,116
Lower Education	10	76,60	8,127		10	114,60	11,673	
Variable	Readiness for Discharge of Patients							
	Before				Before			
	N	Mean	SD	P-Value	N	Mean	SD	P-Value
Age								
Non-Productive	4	77,00	4,082	0,144	4	138,25	19,397	0,210
Productive	12	82,58	82,58		12	153,75	11,925	
Gender								
Male	12	80,33	10,351	0,412	12	151,25	15,052	0,585
Female	4	83,75	5,315		4	145,75	16,641	
Education Level								
Higher Education	6	83,3	7,992	0,468	6	140,00	20,871	0,125
Lower Education	10	79,90	10,192		10	155,80	5,770	

Based on the results presented in Table 4, it is observed that the average readiness for discharge in the control group before structured discharge planning was lower for non-productive age stroke patients compared to productive age stroke patients, with a mean difference of 5.58. The independent t-test resulted in a p-value of 0.052, indicating no significant difference in the average readiness for discharge between non-productive and productive age stroke patients in the control group before structured discharge planning.

Similarly, after structured discharge planning, the average readiness for discharge in the control group was higher for non-productive age stroke patients compared to productive age stroke patients, with a mean difference of 5.67. The independent t-test resulted in a p-value of 0.550, indicating no significant difference in the average readiness for discharge between non-productive and productive age stroke patients in the control group after structured discharge planning.

Discussion

This research utilizes patient age categories according to the Ministry of Health of the Republic of Indonesia (2018), which include productive (15-64 years) and non-productive (> 64 years) age groups. Based on the findings, it was observed that the majority of stroke patients fell into the productive age category. These results align with those of Suprapti's (2017) study, where most respondents with pulmonary tuberculosis who underwent discharge planning were in the age range of 40-59 years (53.3%) and 20-39 years (36.7%). The study categorized stroke patients receiving structured discharge planning into two gender groups: male and female. The results revealed a difference in the majority of categories between the two groups.¹³ However, Yulia's (2018) study with 30 respondents stated that the majority of respondents by gender were female, with 17 respondents (56.7%).¹⁴ This research categorized formal education levels into two levels according to Law Number 2 of 1989 as cited by Lestiarini & Sulistyorini (2020), comprising low education (SD and junior high school) and high education (high school,

diploma, and bachelor's degree). Based on the findings, it was determined that the majority of respondents had a high level of education. This research elucidates that education is a process of guidance provided by one individual to the development of others toward specific goals to enable humans to act and live their lives safely and happily. Education can influence individuals in their attitudes and behaviors to accept information and confront issues.¹⁵ Generally, the higher a person's education level, the easier it is for them to receive information.¹⁶ However, research results indicate that education level indeed does not influence patients' readiness for discharge.¹⁷

Based on the research findings, the readiness for discharge among stroke patients before and after receiving structured discharge planning in the control group resulted in the majority of patients having the same readiness level before and after, categorized as "ready". Another study by Yulia (2018) also supports these findings, where the majority of patients were found to be "ready" in 20 respondents (66.7%).¹⁴ Regarding the difference in the average values before and after in both groups, the difference was greater in the intervention group, consistent with the findings of Suprapti (2017), where the average values before and after receiving discharge planning in the intervention group were greater than in the control group. Based on these research findings, it can be explained that structured discharge planning implementation can change the readiness for discharge among stroke patients.¹³ Increased implementation of discharge planning will enhance patients' readiness to return home, while decreased implementation will reduce patients' readiness for discharge.¹⁸ Furthermore, these results are supported by the study conducted by Ernita et al. (2015), which stated that after receiving discharge planning, the level of readiness among respondents facing discharge increased, where more than half of the respondents (71.43%) had a good readiness level for discharge, being able, willing, and confident in performing the activities taught during discharge planning after being at home.¹⁹

Based on the results of the study conducted on stroke patients regarding readiness for discharge before and after receiving structured discharge planning, it is stated that there is a significant difference between the readiness for discharge of stroke patients before and after receiving structured discharge planning. These research findings are consistent with the study conducted by Wahyuni et al. (2012), which concluded that there is an influence of implementing discharge planning on the readiness for discharge of patients. Stroke patients prepared for discharge with counseling and health education were found to effectively increase their readiness for discharge in physical, psychological, social, and spiritual aspects.²⁰ The results of this study are further supported by another study conducted by Ramayanti et al. (2014), which revealed the influence of discharge planning on the readiness for discharge of diabetes mellitus patients. The success of discharge planning ensures that patients can perform safe and realistic follow-up care after leaving the hospital. Therefore, patients are deemed ready for discharge if they are knowledgeable about their treatment, warning signs, activities to be performed, and ongoing care at home. The success of discharge planning enables the continuation of safe and realistic follow-up care after leaving the hospital.²¹ Based on the explanations above, the researcher assumes that stroke patients before and after receiving discharge planning are more likely to be ready for discharge due to various factors. Some of these factors include internal factors of the patients themselves such as their knowledge and perceptions, as well as external factors such as the knowledge and perceptions of nurses. Additionally, the content of the discharge planning implementation reflects the readiness for discharge of both the patients and their families in carrying out further care for the patient at home.

Conclusion

According to the study's findings, patients' preparedness for discharge can be greatly improved with structured discharge planning, which could therefore improve post-hospitalization outcomes. This means that to better prepare patients for their exit from the

hospital, hospitals should give priority to established discharge planning protocols. Hospitals might potentially lower the risk of readmissions or difficulties after discharge and improve continuity of care by doing this. These findings support the introduction of organized discharge planning from a policy standpoint, especially in institutions that treat stroke patients. By implementing such procedures, the discharge procedure could be standardized and all patients could be given thorough and efficient training before being released from the hospital. The study also emphasizes the necessity for more investigation into the long-term impacts of organized discharge planning on patient outcomes. Future studies could identify which specific components of the discharge planning process are most effective, providing valuable insights for refining and enhancing discharge protocols. This ongoing research could contribute to developing best practices that optimize patient care and recovery post-discharge.

Conflict of Interest Declaration

There are no conflicts of interest in this study.

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