

THE IMPACT OF VIDEO-BASED DISCHARGE PLANNING ON THE FULFILLMENT OF DAILY ACTIVITIES AND JOINT RANGE OF MOTION EXERCISES ON FAMILY READINESS TO CARE FOR STROKE PATIENTS

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Keywords:

discharge planning
family readiness
range of motion
stroke

Abstract

Discharge planning is a systematic and methodical process. Family readiness is crucial and entails preparation in caregiving, educational provision, delineation of roles within the home, and the anticipation of obligations prior to the patient's departure. Video serves as a medium via which families can make informed decisions, enhance abilities, adjust to new circumstances, and refine cognitive patterns. Object. To assess the impact of video-based discharge planning on fulfilling daily demands and joint range of motion exercises on familial preparedness to care for stroke patients. Methods: This study employed a quantitative methodology with a pretest-posttest control group design. This study utilized a sample of 60 family members who will subsequently provide home care for stroke patients, employing a complete sampling technique. The subjects of this study were family members of stroke patients treated at PKU Muhammadiyah Gamping Hospital. The utilized instrument was a knowledge and skills questionnaire modified from prior research employing bivariate analysis methodologies. Results: The Mann Whitney U Test yielded a p-value of 0.001, which is less than α (0.05), indicating significant differences in preparedness outcomes between the intervention and control groups. In conclusion, video-based discharge planning for daily activity needs and joint range of motion exercises is deemed effective in enhancing family preparedness to care for stroke patients. p value (0.001) < α (0.05) means that there are differences in readiness results in the intervention group and control group. Video-based discharge planning on fulfilling daily activity needs and joint range of motion exercises is considered capable of increasing family readiness to care for stroke patients

Received: March 2025

Accepted: July 2025

Published: November 2025



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INTRODUCTION

Stroke causes the most impairment and hospitalization worldwide, with 204 per 100,000 people hospitalized annually. The World Stroke Organisation (WSO) describes stroke as a disorder in which brain cells are deprived of oxygen due to blood circulation disruption, causing brain damage and functional disability. A thrombus in the oxygen artery blocks the cerebral arteries. A blood artery rupture may cause brain bleeding. This stroke may cause permanent paralysis, speech problems, cognitive difficulties, and memory issues(1).

According to the 2023 Riskesdas figures from the Indonesian Ministry of Health, there were 638.178 strokes in Indonesia, with DIY having prevalence at 0.15%, or 8.988 patients. The national prevalence was 8.3 per thousand. Research from 2023 shows 14 per thousand Sleman citizens had strokes by 20. The prevalence is from Sleman, a Special Region of Yogyakarta, with a population of 1,300,361 in 2023 (2) Preventive, acute, and post-stroke rehabilitation are typical stroke treatment stages. Post-stroke rehabilitation helps stroke victims (3). Patients experience limb weakening, facial sagging, cognitive

impairment, auditory impairment, heightened sensitivity, feelings of alienation, worthlessness, family dependency, and perhaps dementia (4). Stroke patients with disabilities depend on their families since their physical limitations affect their daily lives. The lack of information makes the family unaware of how to care for the ill family member, leaving them uncertain about stroke patients' daily needs, family substitutes, and muscle rehabilitation exercises for post-hospitalization stroke patients.

Improved patient satisfaction, shorter hospital stays, and reduced readmission rates need discharge planning (5), while utilizing community resources and services will help patients and families with self-care at home. This discharge strategy lets nurses analyze physiological, psychological, and social concerns. Nurses provide discharge preparation processes and materials for patients and families. Comprehensible media, such as movies, are essential because hospitals use standardized discharge planning forms that patients and families must complete. Training films will be added to the hospital management information system developed by previous researchers (6).

Many studies focus on medical treatment and physical rehabilitation after stroke, but few discuss how families are prepared to care for patients at home. In most hospitals, discharge planning is still limited to written or verbal instructions, which are often difficult for families to understand. There is little use of easy and practical media, such as educational videos, to help families learn about home care and exercise after discharge. This situation can slow down recovery and increase the risk of complications or readmission. This study seeks to assess the impact of video-based discharge planning on the satisfaction of daily demands and joint range of motion exercises on the family's preparedness to care for stroke patients at RS PKU Muhammadiyah Gamping.

METHODS

This research employs a quasi-experimental design utilizing a nonequivalent control group approach, sampling all families of patients accompanying their relatives during treatment at RS PKU Muhammadiyah Gamping (total sampling) who meet the specified inclusion criteria, resulting in a total of 60 participants. The research instrument employed was a 13-minute and 40-second educational video, created by the researcher, encompassing content on stroke comprehension, signs and symptoms, risk factors, first aid for stroke patients, care for individuals with limb weakness, and challenges in performing daily activities. The film emphasizes skills or talents related to training individuals with limb weakness, aiding in mobility, clothing, and toileting. Family members can view and download educational resources via the RS PKU Muhammadiyah Gamping website. This study employs a questionnaire requiring respondents to complete 17 items assessing their knowledge level and 19 items evaluating their competence in caring for stroke patients at home. The instrument validity assessment was performed utilizing the Content Validity Index (CVI) methodology, which engaged three experts. The statistical analysis via Pearson Product Moment yielded valid results (significance value 0.05) and demonstrated reliability following the Alpha Cronbach test, with a significance value of 0.889. Data analysis employs univariate analysis to ascertain the demographic characteristics of respondents and bivariate analysis to evaluate their influence, using the Mann-Whitney U Test and the Wilcoxon Signed Rank Test for pre-post test findings, executed in SPSS (7). The ethical clearance was performed based on the number 014/KEP-PKU/I/2024

RESULTS

Table 1 Frequency Distribution of Respondent Characteristics (N= 6) *According to the mean values*

Category	Interventi on group (n=30)		Control group (n=30)	
	N	%	N	%
Age				
Early Adulthood 15-40 tahun	24	80	28	93,3
Late Adulthood 41-60 tahun	6	20	2	6,7
Gender				
Male	11	36,7	12	40
Female	19	53,3	18	60
Educational attainment				
Low (Basic School-Junior high School)	10	33,3	9	30
Middle (Senior High School)	18	60	14	46,7
High (Bachelor)	2	6,7	7	23,3
Work				
Employed	21	70	22	73,3
Unemployed	9	30	8	26,7
Experience to care stroke patients				
Has experiences	11	36,7	6	20
Unexperience	19	63,3	24	80

Table 1 presents the characteristics of respondents categorized by age, gender, educational attainment, work experience, and experience in caring for stroke patients. The age cohort of 15-40 years constituted 80% of the intervention group and 93.3% of the control group. The female demographic predominates in both groups, comprising 53.5% of the intervention group and 60% of the control group. The respondents with the highest educational attainment are high school graduates, categorized as medium, with 60% in the intervention group and 46.7% in the control group. Most participants are employed, with 70% from the intervention group and 73.3% from the control group. In the intervention group, 63.3% of responders lacked experience in caring for stroke patients, whereas this figure was 80% in the control group.

The Readiness of Family Caregivers to Care Stroke Patients Before and After Intervention

Table 2. The Readiness of Family Caregivers Based on Knowledge and Skills to Care for Stroke Patients Before and After Intervention (N = 60)

Kesiapan	Kelompok Intervensi (n=30)						Kelompok Kontrol (n=30)					
	Pre Test			Post test			Pre test			Post Test		
	N	%	Mean	N	%	Mean	N	%	Mean	N	%	Mean
Pengetahuan												
Siap	1	53,3	37,3	2	70	37,57	1	53	15,87	1	50	15,90
	6	3		1			6	3		5		
Tidak siap	1	46,7		9	30		1	46,7		1	50	
	4	7					4	7		5		
Keterampilan												
Siap	1	60	37,3	2	76,3	37,57	1	46,7	15	7	23,3	15,90
	8			3	7		4	7	8	3		
Tidak siap	1	40		7	23,3		1	53,3	7	23,3	76,7	
	2			3			6	3		7		

Sumber: Data primer, 2024

According to the mean values presented in Table 2, the intervention group demonstrates an enhancement in knowledge and skill readiness, whereas the control group exhibits a decline in these areas. The preparedness score was derived from the aggregate of the knowledge and skills components identified in the intervention group respondents. In the knowledge readiness pretest, 16 respondents were classified as ready, while in the skill readiness pretest, 18 respondents were declared ready. Subsequently, in the post-test of the intervention group, knowledge readiness rose, with 21 respondents prepared to care for stroke patients, and skill readiness also climbed to 23 respondents.

Tabel 3 Wilcoxon Statistical Test Result Mean of Knowledge and Skills Readiness of Family Caregiver of Intervention Group.

Table 3 illustrates a disparity in the mean outcomes between the pretest and posttest within the intervention group, as determined by the Wilcoxon Signed Rank Test, which yielded a p-value of 0.005, less than the significance level of 0.05, signifying an enhancement in family readiness following the intervention.

Intervention group	Mean	p-value	Z	n
Pre-Test	37.30	0.005	-2.828 ^b	30
Post-Test	37.57			

Tabel 4 Wilcoxon Statistical Test Result Mean of Knowledge and Skills Readiness of Family Caregiver of Control Group

Control group	Mean	p-value	Z	n
Pre-Test	15.87	0.968	-0.041 ^b	30
Post-Test	15.90			

Table 4 indicates that there is no significant difference in the means of the pre-test and post-test findings, as determined by the Wilcoxon Signed Rank Test, with a p-value (0.968) exceeding α (0.05). This suggests that there was no enhancement in family preparation following the intervention in the control group.

Table 5 Mann Whitney U Test Result on Intervention and Control Group

Intervention group	Variable	p-value	Z	n
Control group	The readiness of Family Caregiver to care for stroke patient	< 0.001	-6.789 ^b	30

Table 5 indicates a p-value of less than 0.001, which is below the α level of 0.05, signifying a statistically significant difference between the two groups. Video-based discharge planning significantly influences daily demands and joint range of motion exercises, enhancing the family's preparedness to care for stroke patients. The Mann Whitney U Test yielded a p-value of < 0.001, which is below the α threshold of 0.05. Video-based discharge planning focusing on daily requirements fulfillment and collaborative range of motion exercises enhances family preparedness to care for stroke patients post-discharge. The Wilcoxon Signed Rank Test findings corroborated this finding, leading to the acceptance of the hypothesis, as the p-value (0.005) was less than α (0.05), signifying a difference between the pre-test and post-test in the intervention group. In contrast, the Wilcoxon test findings for the control group revealed a p-value of 0.968, which exceeds α of 0.05, signifying no significant difference between the pre-test and post-test values in that group.

DISCUSSION

This study demonstrated that a video-based discharge planning intervention enhanced stroke patients' performance in activities of daily living (ADLs), adherence to joint range-of-motion (ROM) exercises, and family preparedness for home care provision (8,9). The findings indicate that multimedia and technology-assisted discharge education can improve knowledge, skills, and confidence among patients and caregivers, ultimately enhancing post-discharge outcomes in stroke care (10,11).

Video integrates verbal explanations with visual demonstrations, engaging dual learning channels and enhancing the encoding of procedural knowledge, including positioning, transfers, and range of motion sequences (12,13). Research in stroke populations indicates that patient-centered educational videos enhance stroke literacy, satisfaction, and specific knowledge areas compared to traditional written or verbal information (14,15). Favilla et al. demonstrated that the MyStroke personalized video-based education platform markedly enhanced patient and caregiver satisfaction, as well as personalized stroke knowledge, relative to standard care. This finding indicates that audiovisual modules offer greater engagement and retention compared to traditional information leaflets (16). Nazari et al. showed that an online stroke educational program enhanced quality of life and decreased care burden for stroke survivors and their caregivers, thereby reinforcing the importance of structured multimedia education in improving comprehension and long-term retention of essential self-care concepts (17). In contrast to traditional bedside teaching, video-based discharge planning allows families to access and review content repeatedly, particularly when they are engaged in care tasks. This repetitive, on-demand access enables caregivers to enhance their understanding, verify the correct sequence of steps, and rectify errors while assisting with activities of daily living (ADL) or

performing range of motion (ROM) exercises (18). Wang et al. demonstrated that a video-based teach-back method in continuous nursing enhanced the caring abilities of family caregivers and the self-care abilities of stroke patients. This finding illustrates that repeated exposure and active recall of audiovisual material reinforce learning and facilitate the correct execution of daily care activities (19).

The notable enhancement in ADL fulfillment within the video group suggests that the intervention not only augmented knowledge but also resulted in quantifiable behavioral change in the home environment. Research indicates that structured discharge planning, particularly when led by nurses and supplemented with educational media, enhances functional status and engagement in daily activities following a stroke (20). The enhancement in ROM exercise adherence noted in this study corresponds with evidence that video or internet-based exercise instruction enhances compliance with home-based rehabilitation.

Family readiness to provide care is a critical factor influencing safe discharge and effective recovery from stroke at home. This study found that video-based discharge planning markedly improved family readiness scores in comparison to standard discharge procedures. This aligns with evidence indicating that structured and audiovisual discharge training enhances discharge readiness, functional outcomes, and reduces caregiver burden (21,22).

A study conducted by Rasmussen et al. demonstrated that discharge training, when paired with telephone counselling, enhanced functional status, self-efficacy, and reintegration into normal living for stroke patients, while also alleviating caregiver burden (23). Imron and Arofiati reported that online stroke educational programs improved patients' quality of life and decreased caregiver burden, underscoring the importance of comprehensive educational support during the transition from hospital to home in preparing

families for long-term care. Empirical studies consistently demonstrate that Orem-based educational programs enhance self-care behaviors, self-efficacy, and quality of life in individuals with chronic illness (24). Khademian et al. found that self-care education grounded in Orem's theory notably enhanced the quality of life for patients with hypertension. Similarly, Jandaghian-Bidgoli et al. showed that an Orem self-care model alleviated symptoms and improved both quality of life and self-care among patients with diabetes. In 1819, Torun and colleagues demonstrated that the application of SCDNT in adolescents with chronic conditions improved self-care knowledge and skills, thereby affirming the theory's wide applicability across various populations (25). Orem initially characterized supportive-educative systems as direct interactions between nurses and patients; however, recent studies indicate that these systems can also be implemented via digital technology. Programs grounded in theory that incorporate Orem's concepts into telehealth, algorithm-driven training, and organized self-care modules have demonstrated beneficial outcomes on independence and quality of life across multiple chronic conditions. Helttya et al. utilized Orem's self-care deficit theory alongside the theory of human becoming to address sleep disturbances in patients experiencing post-stroke urinary symptoms, resulting in enhancements in self-care and symptom management (26).

This research presents limitations, including the follow-up period was limited, resulting in the absence of evaluation for long-term outcomes, including recurrent stroke, rehospitalization, and sustained caregiver burden. The effectiveness of the video intervention may be affected by factors such as digital literacy, device access, and internet connectivity, which were not systematically assessed. When considered in conjunction with international evidence regarding video-based education, telerehabilitation, and Orem-based self-care interventions, the findings provide robust support for the integration of video-based

discharge planning as a standard element of stroke nursing practice. Future research may investigate hybrid interventions that integrate video modules with synchronous telehealth follow-up or messaging-based coaching, explicitly based on Orem's theory, and assess long-term impacts on self-care behaviors, clinical outcomes, and caregiver well-being.

CONCLUSION

Based on statistical analysis ($p < 0.001$), video-based discharge planning significantly improved family readiness compared to standard discharge procedures.

ACKNOWLEDGMENT

Innovation is essential in healthcare, particularly in hospitals, to use modern media of education such as video-based learning.

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