ISSN 2548-6462 (online), ISSN 2088-8740 (print)

DOI: 10.30644/rik.v13i2.873

Discharge planning improved quality of life on stroke patient: A review

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Accepted: 29 July 2024; revision: 13 November 2024; published: 31 December 2024

Abstract

Background: Discharge planning in stroke patients represents a novel evidence-based intervention strategy when implemented in a systematic and comprehensive manner. The integration of several evidence-based standards or elements has the potential to enhance the clinical outcomes of stroke patients. The objective of this study was to ascertain the evolution of research on discharge planning in stroke patients over the past five years (2019-2024).

Method: This research employed a literature review design with a database article search method on EBSCO, ScienceDirect, and PubMed.

Result: The majority of the subjects studied were patients with acute stroke disease, and the results of the study demonstrated effective outcomes for the variables under investigation.

Conclusion: The literature that indicate the potential of interventions to improve clinical outcomes and quality of life in stroke patients

Keywords: discharge planning; QoL; stroke; occupational therapy

INTRODUCTION

Stroke is a general term for a group of conditions that result in neurological dysfunction. It can be localized, affecting a single area of the brain, or it can be widespread, affecting multiple regions. The most common forms of stroke are ischemic and hemorrhagic. Ischemic strokes, which account for 68% of all stroke cases globally, are caused by blocked vascularization in the brain, while hemorrhagic strokes result from vascular ruptures that can lead to bleeding in the brain (1). Based on the above references, time is of the essence in the management of ischemic stroke because as many as 190,000 brain cells will be lost every minute, approximately 14,000,000,000 nerve connections will be destroyed, and 12 km (7.5 miles) of nerve fibers are lost every minute (1).

The researchers suggest that the high rates of mortality and morbidity associated with stroke, which refer to long-term disability, highlight the need for preventative measures through the establishment of a comprehensive range of interventions. One such intervention could be the development of optimal discharge planning (2). Discharge planning represents a crucial component of the comprehensive nursing care process, facilitating a seamless transition of care by identifying and addressing patient care needs. This process entails a thorough assessment of the patient's health and functional capabilities after discharge, ensuring the optimal provision of care and a positive post-discharge outcome (3).

Discharge planning orientation involves medical professionals with the objective of enhancing the quality of care and preventing recurrent stroke in patients following their discharge from home (4). Furthermore, the participation of patients and their families is essential for the optimization of a safe and effective discharge planning process (5).

Caregivers are essential to the success of rehabilitation programs for post-stroke patients. Medical professionals must be able to integrate occupational therapy in discharge planning. This includes assessing functional needs, planning environmental adaptations, providing education and

training, creating recovery plans, coordinating with health professionals, monitoring, and patient follow-up (6). Patient evaluation is carried out by assessing several components, including sensory-motor functional disorders, communication, perception-cognition, mental status (anxiety or depression), nutritional needs, and medications for stroke patients (7). Concurrently, the evaluation of the caregiver is conducted through the assessment of the burden and the provision of guidance in the education of the aforementioned care (6).

Previous publications by Taha et al. (2020) have highlighted the importance of discharge planning program design for stroke patients. The results of these studies demonstrate the need for improved discharge planning in stroke care, particularly in the assessment and education of patients during the transition period before discharge. The implementation of these strategies has been shown to reduce mortality rates (8).

To minimize the risk for stroke patients, it is imperative that nursing services related to follow-up care be maintained until the patient has transitioned to receiving care at home. Although the patient has received optimal care during the hospitalization period, it is essential to ensure that the care plan is well-designed and effectively implemented in the home setting. This step is of critical importance for supporting the patient's recovery process and achieving optimal outcomes. With comprehensive and continuous discharge planning from the hospital to home, it is anticipated that stroke patients can receive comprehensive care and achieve maximum functional capacity (9).

Standardized discharge planning ensures that stroke patients receive continuous medical care during transfers and at home, thereby preventing further complications, reducing hospitalizations and readmissions, and improving the quality of life of post-stroke patients (3). Therefore, The intention of this article is to provide a comprehensive review of the literature that forms the basis for evidence-based practice in the field of occupational therapy and discharge planning for acute stroke patients. The article will present insights into the clinical outcomes and benefits of this approach, as well as its impact on reducing morbidity and mortality rates in acute stroke patients.

METHOD

A systematic search for this review across the databases EBSCO, Science Direct, and PubMed was conducted up to June 2024 using the following keywords: ("Acute Stroke" [All Fields] AND "Discharge Planning" [All Fields] OR "Discharge Planning on Stroke" [Mesh Terms] OR "Caregiver on Stroke" [All Areas] OR (("Stroke Management" [All Fields] OR "Quality of Life on Stroke" [All Areas] OR ("QoL on Acute stroke" [All Areas] AND "Discharge Planning for Quality Of Life" [Non-Pharmacological Measures] OR "QoL on Hemorrhagic Stroke" [MESH Term]) OR (("Discharge Home-based Care on Hemorrhagic Stroke" [All Fields] AND "Discharge Care Acute Stroke Hemorrhagic" [All Fields]). The aforementioned electronic databases were searched using journal search methods to identify relevant studies. The results of this search strategy were limited to randomized controlled trials, prospective studies in humans, and those written in English or Indonesian.

The analysis focused exclusively on articles published within the past five years, spanning the period from June 2019 to June 2024. Articles published in languages other than English, as well as systematic reviews, literature reviews, retrospective studies, case reports, opinion articles, and letters to the editor, were excluded from the analysis. In the initial stage of the analysis, titles and abstracts were screened based on the pre-established inclusion and exclusion criteria. Only trials involving acute stroke patients and investigating the outcomes of discharge planning implementation in acute stroke

patients that compared some type of study group with a control group without being assigned a specific intervention were included in this review. The eligibility criteria were applied explicitly to the primary study.

The primary outcomes evaluated were the principal post-discharge planning responses when patients developed neurological symptoms, the majority of which were conducted within 14 days of admission. Other investigations sought to ascertain the empirical effectiveness of clinical evaluations following comprehensive discharge planning care, the controlled administration of neurologic medications, and hospital resource-related outcomes, including length of stay in the Intensive Care Unit (ICU) and total length of hospital stay. The extracted trial characteristics included a risk of bias assessment of the Cochrane Collaboration Tool for randomized controlled trials, which was used to assess the methodological quality of each randomized trial.

RESULT

A literature search identified 2,588 studies, of which 14 met the inclusion criteria. The screening diagram, created using PRISMA guidelines, illustrates the literature search and selection process (Figure 1). The characteristics of these studies are shown in Table 1.

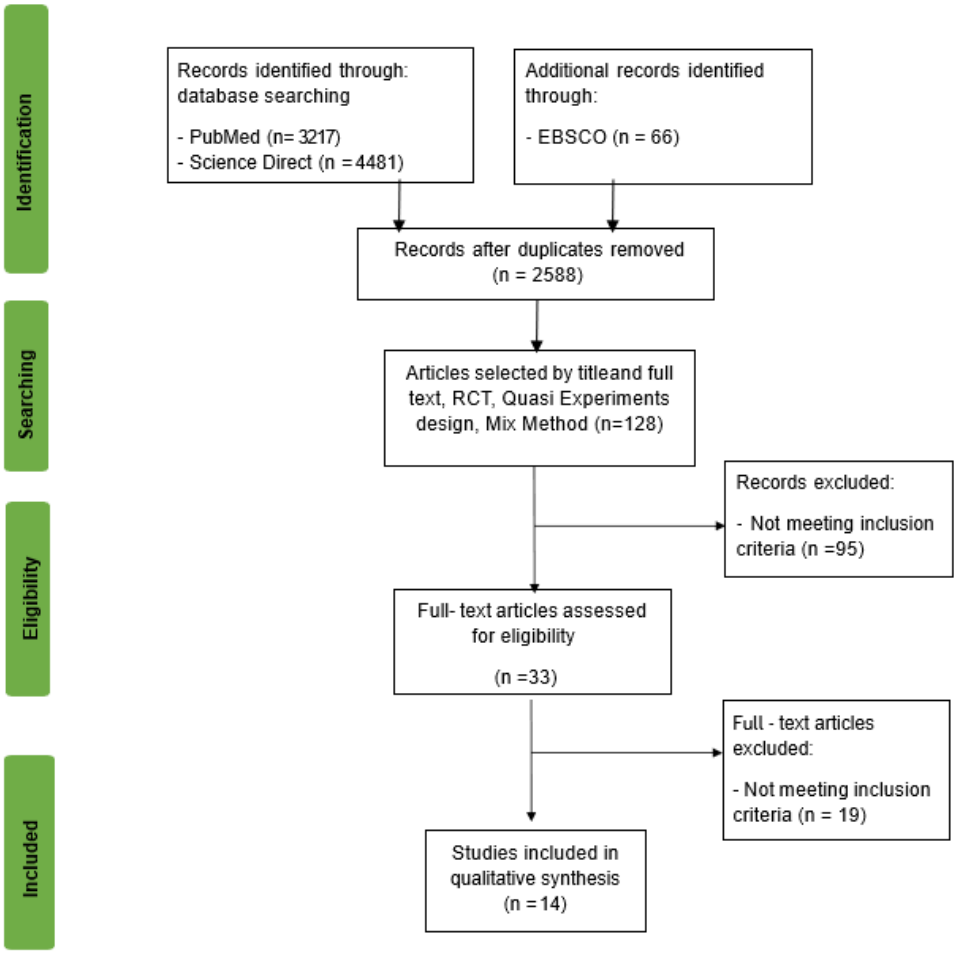

Figure 1. Prisma scheme

Table 1.The characteristics of studies

Purpose	Authors	Years	Study design	Group (n)	Control Group	Tools	Primary Out-come
Comparing readmission and stroke mortality rates by outpatient services..	Swanson et al	2019	Regression descriptive analysis	Primary stroke patients 2009-2014	Primary stroke patients 2009-2014	Death register (DAR) dan national GP reimbursemen register and Kontrollog Utbetaling av HelseRefusion (KUHR)	A comparative analysis between readmissions and mortality rates found that patients with post-discharge readmissions were generally weaker, older, and had higher readmission and mortality rates.
Outline the process of implementin g discharge planning, examining the activities of stroke patients, and assessing the role of nurses as educators in the implementat ion of discharge planning.	Rayanti et al	2020	Qualitative	Stroke patients (n=4)	Stroke patients (n=4)	Interview and observation	This study focuses on the important role of education as an educator, determining discharge criteria, planning and discharge planning barriers to improve quality of life, post-stroke activity changes and reducing readmissions of stroke patients. The success of discharge planning is determined from several disciplines starting from nurses with their performance, patients, and families of patients who understand and can follow post-discharge care instructions by health professionals.
Evaluate the effect of the discharge planning program on the activity needs and quality of life of stroke patients.	Taha et al	2020	Quasi-experiment	Stroke patients (n=50)	Stroke patients (n=50)	Stroke Specific Quality of Life Scale (SSQOL) and Barthel Index	This study clearly showed several stroke risk factors (socio-demographics) such as age, married patients ≥ half were illiterate and ≤ workers, 92% of patients lived in rural areas, two-thirds due to ischemic. The above demographic characteristics and risk factors can design effective interventions and discharge planning programs. A positive correlation analysis was found between patient knowledge, quality of life, and activities of daily living. Post test knowledge scores related to activities of daily living in stroke patients who get discharge planning are higher than the pre-test. Implementation of discharge planning in the form of functional activity care education, emotional disorders, post-stroke environmental adaptation can improve knowledge, quality of life and independence of post-stroke patients.
Analyze the factors that influence caregiver readiness for post-stroke patient care.	Septianin grum et al	2023	Cross-sectional study	Caregive r (n=59)	Caregiver (n=59)	Demographic readiness questionnaire and Family Readiness for Hospppital Discharge Scale (FAM-RHDS)	The mean knowledge score of 4.68 ± 3.05 indicates poor knowledge among caregivers which means they are not fully prepared to care for their family members with stroke. In addition, a p value of 0.000 was found in the demographic factor

Purpose	Authors	Years	Study design	Group (n)	Control Group	Tools	Primary Out-come
						questionnaire	showing it was significantly associated with family caregivers' readiness to care for stroke patients. Both factors (demographic and knowledge) may influence family caregivers' readiness to care for stroke patients after discharge from hospital. These findings emphasize the importance of addressing both factors to improve the quality of care by family members to post-stroke patients.
Identify the factors that influence caregiver readiness for post-stroke patient care and will inform improvements to family readiness to care for stroke patients at home.	Hurial et al	2019	Quasi-experiment	Patient (n=21)	Patient (n=21)	Data collection	The implementation of education with video media in discharge planning interventions is very effective in increasing knowledge and understanding of care, self-efficacy in stroke symptoms, and stroke patient satisfaction, and family readiness in caring for stroke patients at home. The role of nurses as counselors is applied by combining visual, audio, and animation components into an approach between health professionals to families on how to care for stroke patients with early self-care deficits at home.
Identify effective discharge planning facilitators through a collaborative approach.	Lannin et al	2022	Qualitative descriptive	Patient (n=16) Family (n=16) Nurses (n=17) Managers (n=12)		Interviews with Braun and Clarke tools	Effective communication is emphasized for discharge planning to take place such as collaborative discharge planning decision making based on the perspectives of the patient, family members, and healthcare professionals. Inter- and intradisciplinary teamwork is revealed efficiently by fostering an environment that promotes and applies the principles of effective communication.
Determine the impact of discharge planning on patient satisfaction with nursing care and to analyze the relationship between discharge planning and patient satisfaction indicators.	Sabri et al	2021	Cross sectional	Patient (n=43)	Patient (n=6 9)	Likert scale questionnaire	Discharge planning has an important influence on satisfaction with care and patient responsiveness in terms of being better prepared for self-care after discharge. Implementation of comprehensive discharge planning including clear communication by healthcare professionals can reduce patient anxiety, risk, LOS, costs, and readmissions. Another finding was that a training program for caregivers with coaching sessions can increase the effectiveness of discharge planning which can contribute to increased patient satisfaction.
A comparative analysis of the impact and stress levels before and after the	Ramadhani et al	2024	Quasi-experiment	Stroke patients (n=21)	Stroke patients (n=21)	Data collection	Hypertension was identified as the biggest risk factor for stroke. other findings obtained that individuals with high levels of education showed positive health-related behaviors. dischrarge planning application is able to increase knowledge in the level of patient confidence and

Purpose	Authors	Years	Study design	Group (n)	Control Group	Tools	Primary Out-come
implementation of application-based discharge planning is required.							reduce stress levels significantly in stroke patients as evidenced by statistical analysis of the Wilcoxon test (p=0.000, p≤0.005).
Assess the impact of a family-oriented discharge planning approach on the quality of life of post-stroke patients.	Restipa et al	2019	Quasi-experiment	Ischemic stroke patients (n=26)		QoL WHO	Discharge planning that focuses on family education can improve the quality of life of stroke patients as evidenced by statistical tests (p=0.04).
Correlate health-related quality of life (HRQoL) with activities of daily living (ADL) and assess the impact of rehabilitation on HRQoL in patients who have experienced a stroke.	Hartley et al	2022	Prospective longitudinal	hospitalized stroke patients taken over a 6-month period		Euro-QOL Five Dimensions (EQ5D-3L); Barthel index; and Modified rating scale (mRS).	There was a correlation between improvement in BI and mRS scores with a decrease in stroke severity. Another finding was a significant improvement in EQ5D VAS scores, except in the anxiety/depression domain. Additional pain management interventions and post-stroke psychological support are needed.
Improve family readiness and reduce caregiver stress in stroke patients.	Mohammad et al	2019	Randomized Controlled Trial	Caregiver (n=30)	Caregiver (n=30)	Kingston Caregiver Stress Scale (KCSS) and Preparedness for Caregiver Scale (PCS)	Family caregivers in the experimental group experienced lower stress levels than those in the control group. Other findings illustrate the implementation of discharge planning with individualized education tailored to caregiver needs was shown to improve family readiness for care and reduce stress levels among caregivers. Therefore, supportive discharge planning interventions such as provision of knowledge and skills for follow-up calls during continuity of care after discharge, adaptation support, and low/minimal cost in Iranian hospitals can improve caregiving experience and overall well-being.
Develop and validate tools and improve planning efficiency for predictive discharge planning in	Ottiger et al	2022	Descriptive statistics, non-parametric tests, and CART analysis.	Acute stroke patients (n=121)	Acute stroke patients (n=832)	N/A	Both samples received medical care and rehabilitation according to Swiss national guidelines. Factors considered in discharge planning included neurological status, ADL, Montreal cognitive, functional ambulation, premorbid modified Rankin scale. In addition, the occupational and physical therapy

Purpose	Authors	Years	Study design	Group (n)	Control Group	Tools	Primary Out-come
acute stroke units.							provided to patients was patient-oriented to perform repetitive exercises to help the recovery process and functional independence. Involvement between multidisciplinary teams such as health professionals and patients themselves.
Improve family preparedness for post-stroke care, develop a CAPD module for families of stroke patients, and assess the impact of audiovisual transfer planning on patient care.	Kurniati et al	2021	Mixed method	Nurse (n=5)	Patient (n=33)	N/A	The application of fulfillment of patient care needs provided by families focuses on ADL, recommended nutrition from the hospital, drug control, and stress coping in the care of stroke patients. Significant differences between the intervention and control groups during MRS, medication, and KRS were seen from the family's understanding of the above education. Other findings found barriers in communication between the nursing team and patients/families in the implementation of discharge planning. The use of CADP and audiovisual modules that are interesting, easy to understand and can be replayed if forgotten by the patient's family is able to increase family knowledge, motivation, readiness, and skills with memory power to care for post-stroke patients.
Determine the urgency and assess the impact of discharge planning in stroke patients with hypertensive complications.	Simbolon et al	2019	Quasi-experiment	Patient (n=37)	Patient (n=33)	N/A	The implementation of discharge planning showed an increase in patient satisfaction and independence after stroke e.c hypertension in the intervention group.The satisfaction parameters provided include room service, food service, and discharge planning process. Discharge planning is carried out by ensuring efficient treatment of hypertension so as to prevent patient readmissions.
Determine the effect of early occupational therapy on functional independence and quality of life of stroke patients.	Pérez et al	2021	Prospective randomized controlled clinical trial	Stroke patiens (n=60)		Montreal Cognitive Assesment (MoCA) and Modified Rankin Scale (mRS) as a tools; and Inventarisasi Strategi Koping (CSI) and Skala Beban Caregiver (CBS) as an instrument.	There is an increase in functional independence after stroke with early occupational therapy intervention. Improved sensory-motor, quality of life, and caregiver burden were also other positive effects.

DISSCUSION

The occurrence of an increase in the number of patients hospitalized or readmitted, and the output of rehospitalization costs, represents the impact of suboptimal discharge planning. This systematic review is concerned with the management and outcomes of occupational therapy discharge planning in stroke patients. It draws on a range of sources, including various literatures, to present a comprehensive overview of the subject. The review reveals significant variations in the standards of discharge planning for stroke patients across different literatures. These variations are evident in several key areas, including the evaluation of functional needs, adaptation planning, health condition debriefing and training, development of recovery plans, and monitoring patient follow-up.

This paper will examine the role of nursing personnel in the hospital as case managers and executors of professional patient services. Nurses provide care in the form of pre-discharge care, which includes assessing needs and educating families about stroke planning, assisting patients with mobility, bathing, and drug administration, as well as monitoring post-discharge therapy (10). The aim of providing discharge planning through the dissemination of information to patients and their families is to effect changes in patient behavior, thereby increasing knowledge and providing stimuli that affect awareness and encourage the desired behavior. Various studies have demonstrated the efficacy of occupational therapy in discharge planning for stroke patients. For instance, research conducted by Pérez et al. (2021) indicated that early occupational therapy interventions can enhance post-stroke functional independence, sensory-motor abilities, quality of life, and reduce caregiver burden (6).

The findings of a study by Septianingrum et al (2023) state that based on the Family Readiness for Hospital Discharge Scale (FAM-RHDS) questionnaire, the average knowledge score of 4.68 ± 3.05 indicates poor knowledge among caregivers, which means they are not fully prepared to care for their family members with stroke (11). Therefore, the support of discharge planning interventions to caregivers such as provision of knowledge and skills for follow-up calls during continuity of care after discharge, adaptation support, and minimal costs can improve the caregiving experience and overall well-being. This is evidenced by another study by Mohammad et al (2019) which found from the results of the Kingston Caregiver Stress Scale (KCSS) and Preparedness for Caregiver Scale (PCS) that family caregivers in the experimental group experienced lower levels of stress than the control group (12).

The quality of life of stroke patients represents a significant concern within the field of nursing, given that the majority of stroke patients experience quality of life challenges. This is typically caused by limited mobility and independence among stroke patients (13). A study by Swanson et al. (2019) revealed that pre-stroke factors also affect readmission and mortality rates between care categories. Initial physician follow-up within the first 14 days post-hospital discharge showed no significant difference in readmission or mortality rates after adjusting for health status and demographics (14).

The concept of quality of life can be defined as an individual's perception of the potential for achieving a fulfilling and meaningful existence. The World Health Organization (WHOQOL-BREF) has identified four domains of quality-of-life measurement, including physical health, psychological well-being, social relationships, and the environment. The physical health domain has several aspects, including Activity of Daily Living (ADL), energy and fatigue, mobility, and sleep and rest needs. The psychological domain also has various aspects, such as physical

appearance, positive and negative perceptions, economy, freedom, and security. In addition, personal relationships, support, and social activities are some aspects of the social and environmental relations domain (15).

This is consistent with the findings of Restipa et al. (2019), who observed that patients who received occupational therapy as part of their discharge planning exhibited a notable enhancement in quality of life scores in comparison to the control group (16). A further study by Hartley et al. (2022) demonstrated a positive correlation between Barthel Index (IB) scores and mRS, resulting in an enhancement of quality of life in stroke patients who received occupational therapy (17).

In light of the findings of the aforementioned literature review, it is evident that enhancing the quality of care and outcomes in general with respect to the multifaceted aspects of stroke management necessitates a comprehensive approach. Furthermore, occupational therapy management and assessment of patient quality of life can be conducted effectively through the use of communication. Effective communication between nurses, patients, patients' families, and other health professionals facilitates a mutual understanding of patients' needs and follow-up care plans. The findings of the study carried out by Lannin and colleagues (2023) demonstrate the significance of effective communication in the process of discharge planning. This includes collaborative decision-making regarding discharge, which is based on the input of patients, family members, and health professionals. Effective inter- and intradisciplinary teamwork is contingent upon fostering an environment that promotes and applies the principles of effective communication (18). In a subsequent study, Kurniati et al. (2021) observed an enhancement in the development of effective communication through the utilisation of CADP and audiovisual modules that are appealing, readily comprehensible, and can be replayed if forgotten by the patient's family. This approach was found to augment family knowledge, motivation, preparedness, and abilities for memory-related care of post-stroke patients (19).

A varied approach to implementing discharge planning occupational therapy interventions allows for the fulfillment of patient expectations and needs, thereby enhancing patient satisfaction. Patient satisfaction is frequently utilized as an indicator to assess the efficacy of provided interventions. For example, a study by Simbolon (2019) indicated that patient satisfaction and independence increased following a stroke due to hypertension in the intervention group. The satisfaction parameters encompass room service, food service, and the discharge planning process. Discharge planning is conducted to ensure the efficient treatment of hypertension, thereby reducing the likelihood of patient readmissions (20).

CONCLUSION

A systematic review indicated that there is a possibility that occupational therapy could be beneficial in discharge planning for acute stroke management. It seems that occupational therapy could be an important component of discharge planning, helping patients to achieve greater independence and psychological well-being through thorough assessment. This could involve Activity of Daily Living (ADL) training, environmental adaptation, and family assistance. There are some consistent findings across the literature that indicate the potential of interventions to improve clinical outcomes and quality of life in stroke patients, which could in turn reduce readmissions and mortality rates.

ACKNOWLEDGEMENTS

Researchers would like to thank the Co-authors has given contribution to all of the article draft

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