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Review

Role of Nurse and Health Education in Reducing Readmission Rates

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Abstract

Hospital readmissions pose a significant issue for healthcare systems and patients worldwide, contributing to lower patient outcomes, higher costs, and suboptimal resource use. Nurse-led patient education as an intervention has offered the opportunity to overcome this issue by providing patients and caregivers with the required skills for effective self-care. Improved patient communication on discharge, using strategies such as the teach-back method and post-discharge follow-ups, can reduce readmission rates. This is critical, particularly among patients with chronic conditions such as diabetes, cardiac disorders, and chronic obstructive pulmonary disease. Thus, nurse-led education enhances patient health literacy and improves adherence to treatment plans. However, challenges such as limited time and resources, patient illiteracy, and systemic barriers hinder its effective implementation. This review aims to explore the factors associated with high rates of readmission and the role of nurse education in reducing such rates. It also seeks to demonstrate challenges against the successful implementation of nurse-led patient education with the aim of providing practical solutions for enhancing continuity of care and achieving better patient outcomes.

Keywords: *nurse education, hospital readmissions, patient education, nurse-led patient education, transitional care, teach-back method*

Introduction

Hospital readmissions, first reported among psychiatric patients in 1953, are the unintended return of a patient within a specified time frame after discharge (1). Despite advances in healthcare, hospital readmissions still pose a significant global challenge. The Agency for Healthcare Research and Quality reports that hospital readmissions within 30 days following discharge account for 20% of all readmissions. Disturbingly, over half of this could have been prevented (2). Hospital readmission rates vary by medical condition. Being under Medicaid, sickle cell anemia recorded the highest readmission rate of 36.1%, followed by hepatic failure with a rate of 34.9%. In contrast, schizophrenia and other psychotic disorders had the lowest rate of readmission (3). Not only do hospital readmissions affect patients' health, but they also consume hospital resources and utilities.

Frequent hospital readmissions cause both psychological and financial distress to patients and their families. For instance, readmissions erode the patient's confidence in the healthcare system and incur additional costs beyond the initial costs. Moreover, they strain healthcare utilities and staff time. It also reduces the efficiency of care by diverting resources from patients who need them to readmitted patients (4). Hospital readmissions, which result from disease progression or inability to adhere to the treatment plan after discharge, remain inevitable. However, several hospital readmissions are most likely preventable. Demonstrating the factors contributing to unplanned hospital readmissions is a pivotal step towards developing effective prevention strategies.

Several multifactorial aspects have been identified as contributing to hospital readmissions, including socioeconomic-related elements such as low socioeconomic status and rural residence. Health-related factors have also been shown to contribute, with some comorbidities being associated with more frequent hospital readmissions. These include obstructive pulmonary disease, kidney failure, cerebrovascular disease, diabetes, hypertension, atrial fibrillation [46], cardiovascular disease, liver disease, malnutrition, and depression (5, 6). Finally, healthcare-related factors, such as longer hospital stays, prior readmissions within the last 6-12 months, medication adjustments, and failure to plan post-acute care for the patient, have also been reported to increase the likelihood of readmission. Contributing factors due to inadequate understanding of diagnoses, medications, warning signs, and follow-up plans can be avoided by improving the transition of care at patient discharge. Nurses have the greatest interaction with patients throughout most of their hospital stay. Thus, they have a direct role in reducing hospital readmissions (7).

Nurses provide clinical assessment, support, and education to patients, and coordinate care with other members of the healthcare team. Thus, providing them with targeted training in communication, transitional care models, and self-management coaching to nurses can enhance their impact on readmission prevention (8). Strengthening patient knowledge and self-efficacy at discharge is central to improving patient care and avoiding unplanned readmissions. Nurse-led education through the teach-back method, medication reconciliation, and individualized care planning, as well as coordination of post-discharge follow-ups. Such education can equip patients and caregivers to manage conditions safely at home (7, 9). This review explores the factors contributing to unplanned hospital readmissions and current management strategies, emphasizing the role of nurse education in reducing them.

Methodology

This review is based on a comprehensive literature search performed on November 30th, 2025, in the PubMed and ClinicalKey databases, as well as Google Scholar. Utilizing MeSH (Medical Subject Headings) and relevant keywords such as "nurse education", "hospital readmissions", "patient education", "nurse-led patient education", "transitioning care", "teach-back method". The search aimed to explore studies on the underlying causes of unplanned hospital readmissions and current management strategies, emphasizing the

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role of nurse education in reducing them. The search was not confined by date, language, or type of publication to ensure a broad exploration of the available literature.

Discussion

The Impact of Unplanned Hospital Readmissions

Unplanned readmissions impose substantial clinical, emotional, and financial strains on patients, their families, and healthcare systems. For instance, the stress, uncertainty, and disruption caused by repeated hospital visits can be emotionally draining for patients and their families (10). Clinically, patients may be subject to developing nosocomial infections, such as pneumonia, urinary tract infections, or surgical site infections (11). On the contrary, the original illness could be exacerbated by the stress of hospitalization. Pressure ulcers may also develop from prolonged bed rest. Moreover, readmissions due to complications associated with chronic conditions like chronic obstructive pulmonary disease (COPD) or sepsis contribute to an increased risk of mortality (12-14).

Financially, in a recent systematic review and meta-analysis assessing the financial impact of 30-day readmissions for specific medical conditions, Ghabowen (2024) reported an overall mean 30-day readmission cost of USD 16,037.08 (95% CI, USD 15,196.01-16,870.06), with the highest costs associated with heart failure, followed by Total Hip Arthroplasty and/or Total Knee Arthroplasty (15). Readmissions consume hospital resources and take up capacity that might otherwise be used for new or elective patients, reducing throughput and straining operational efficiency.

More importantly, frequent readmissions often indicate poor quality of care, often due to ineffective resource allocation, poor care transitions, or insufficient follow-up after discharge. A systematic review by Benbassat et al. reported that 9% to 48% of readmissions were preventable, as they were associated with indicators of suboptimal care during hospitalization, such as poor diagnosis, unstable therapy at discharge, and inadequate follow-up after discharge (16). In this context, hospitals that frequently experience high-cost readmissions may lack care coordination and continuity. As an indicator of quality of care, frequent readmissions influence hospital reputation and accreditation in health systems where readmission rates are linked to incentives (17). While several readmissions are often due to unresolved or worsening medical conditions, specific populations, particularly older adults, uninsured individuals, and those with lower incomes, are at a higher risk. Factors such as premature discharge, inadequate follow-up care, or patient misunderstandings about post-discharge instructions also further contribute to unplanned hospital readmissions. Understanding the factors contributing to unplanned readmissions is the first step towards effective prevention strategies.

Factors Contributing to Unplanned Readmissions

Growing evidence shows that an interplay of patient-related, clinical, and system-level factors influences the rates of hospital readmissions, where 7-49% of readmissions can be prevented. Differentiating between preventable and non-preventable causes of hospital readmission is essential for developing targeted interventions, optimizing resource allocation, and improving patient outcomes.

Non-preventable Readmissions

Non-preventable Readmissions can’t be avoided despite adherence to follow-up care after discharge. They often result from natural and unpredictable adverse events. For instance, the natural progression of chronic disease, including heart failure, COPD, and advanced liver disease, is among the most common factors contributing to non-preventable readmissions. This is attributable to clinical instability, characterized by unpredictable symptom fluctuations and sudden adverse events that require hospital readmission despite adherence to treatment plans.

In contrast to chronic conditions, the physiological deterioration associated as a result of aging also plays a significant role. Older adults are prone to frailty, compromised immunity, multimorbidity, and reduced functional abilities, making them more

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prone to complications shortly after discharge. Additionally, severe psychiatric disorders and a lack of social support place a significant burden that cannot be ignored. For instance, reported psychiatric readmission rates range from 10% for one month of observation after discharge to 86% within a seven-year interval (18). Given that these events are not linked to the quality of the previous hospitalization, they cannot be prevented.

Preventable Readmissions

In contrast to unavoidable hospital readmissions, preventable readmissions are associated with suboptimal inpatient care during the initial admission, inadequate discharge procedures, and insufficient post-discharge follow-up. Another major preventable factor is Miscommunication at discharge, which causes a poor understanding of the treatment plan, including medication schedules, warning signs, dietary restrictions, and follow-up appointments. Thus, it contributes significantly to non-adherence to treatment plans and consequent deterioration (19).

Another consequence of miscommunication at discharge is medication-related errors, including errors in reconciliation, rapid medication adjustments, and prescribing complexities, especially cases of polypharmacy, defined as the regular administration of more than 5 medications. This can lead to non-adherence to treatment plans, resulting in adverse drug events and unintentional exacerbations of chronic conditions (20).

In a recent retrospective cohort study by Woods et al. (2025), which analyzed 381 readmissions in general wards in South Australia. They reported that 1 in 5 readmissions was potentially avoidable; the prevalence was higher among females and older adults. The primary cause of preventable unplanned readmissions was a relapse of the condition addressed during initial hospitalization, followed by complications related to treatment. Additionally, patients exhibited higher rates of contrary artery disease and congestive heart failure. They also reported elevated neutrophil-to-lymphocyte ratios at admission (21).

Another retrospective study in Oman by Al Sibani et al. (2022) reported that the most common diagnoses were heart failure, followed by pneumonia, stroke, and urinary tract infection. They demonstrated deterioration in health associated with old age, including increased comorbidities, polypharmacy, and reduced functional dependence. They also noted that a longer length of hospital stay and the presence of more than 3 comorbidities increased the risk of hospital readmission, which aligns with previous studies' findings (20). In addition to healthcare-related factors, several socioeconomic factors, such as lack of transportation, inadequate social support, or limited access to outpatient care services, also play a significant role, as they may hinder timely diagnosis and treatment. Recent studies highlight the significant impact of social determinants of health (SDOH) on the rate of hospital readmissions.

SDOH encompass an individual's place of residence, education level, and occupation. Research shows that SDOH significantly influences patient care from initial care-seeking to post-discharge recovery. It can be classified into five main aspects: financial stability, access to quality education, access to quality healthcare, neighborhood environment, and social support. Adverse outcomes and unplanned hospital readmissions are prevalent among patients with low socioeconomic status, where insecure housing and lack of community support limit access to necessary follow-up care after discharge. Transportation barriers for low-income and older adults also further contribute to high readmission rates, as they lead to postponed or missed care and subsequent deterioration in health outcomes (22).

Improving discharge planning, patient and family education, proper management of comorbidities, and follow-up arrangements might reduce hospital readmissions among older patients or those with a high burden of comorbidities. In this context, nurses play a vital role in reducing hospital readmission rates. Thus, improvement of healthcare education provided to nurses and implementing nurse-led patient education strategies may help mitigate unplanned hospital readmission rates.

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Nurse-led Patient Education Interventions

Nurses play a pivotal role by coordinating effective communication, planning, and patient education. Several care transition programs have been developed with an attempt to reduce unplanned readmissions. Two well-established models demonstrate how nurse education functions within broader transitional-care programs. The Care Transitions Intervention (CTI) reinforces patient self-management skills by providing a concise "red flags" list and a dedicated coach. A randomized clinical trial of CTI reported reductions in rehospitalization through enhanced patient engagement and clearer post-discharge plans. Similarly, the Transitional Care Model (TCM), an advanced-practice, team-based approach led by nurses, integrates individualized education, medication reconciliation, and proactive outpatient follow-up; multisite replications have demonstrated TCM's capacity to reduce readmissions and improve continuity of care among older adults. These landmark frameworks illustrate that nurse education is most effective when embedded in systematic transitional processes rather than delivered as an isolated educational leaflet.

Another program is Project BOOST® (Better Outcomes by Optimizing Safe Transitions). This program recommends that preventive interventions begin at admission to help identify if the patient may require additional interventions during the patient's initial hospital stay. The patient's vital psychosocial functions are evaluated, including cognitive state, drug abuse or dependence, and documentation. The advanced care plan is well-documented and communicated to the patient to address concerns and provide referrals to appropriate resources (23). The General Assessment of Preparedness tool is a simple checklist that addresses potential logistical and psychosocial issues (24). It helps nurses with early patient evaluation, and other healthcare team members can use it as well. In this context, a recent systematic review by Sakashita (2025) evaluated the effectiveness of nurse-led transitional care interventions and reported a significant reduction in readmission and emergency department visit rates and improved quality of life in adult patients discharged from acute care hospitals (25).

Given that many studies link high rates of avoidable readmissions to miscommunication during discharge, clear communication is essential among healthcare professionals, home caregivers, and long-term care facilities. Nurses can assist in gathering written chart information and provide a verbal report to the caregiver responsible for the patient. A well-established strategy for improving patient care is the teach-back method (TBM).

TBM is an educational strategy that has shown high effectiveness in facilitating patient self-care and reducing unplanned readmission rates, as reported by Oh et al. (2023) (26). TBM is designed to enhance patients' accurate understanding of health education through 3 steps: teaching in which the healthcare provider provides health information to the patient; explanation in which the patient repeats the information in their own words; if the patient's explanation lacks some of the given information, the cycle t is repeated until the patient comprehends the information accurately (9). The continuous feedback process of re-educating patients on misunderstood information helps patients recall knowledge more easily.

The period following discharge is critical for both patients and caregivers, as patients are subject to unpredictable changes that may cause confusion. Following up with patients and home caregivers following discharge reinforces adherence to treatment plans. During the initial follow-up call, nurses often inform patients about medication changes and upcoming follow-up appointments. Jackson et al. (2025) reported that follow-up is more efficient within 7 days after discharge (26). Nurses should be trained to simplify medical terms and ensure that important issues are covered and documented in medical records.

Education provided to nurses regarding transition programs, patient communication, and early intervention is highly essential. It has been reported to be cost-effective, where several studies associated lower readmission rates in both adults and pediatrics with nurses having a higher level of

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education (27, 28). Despite the well-proven effectiveness of nurse-led education in reducing hospital readmission rates and enhancing continuity of care, one of the challenges to its successful implementation is inadequate nurse training.

Challenges and Limitations

Time constraints are another major obstacle resulting from high workloads, which may lead to reduced quality of care. Limited resources, particularly in middle- and low-income countries, may lead to a lack of teaching materials and hinder the continuation of educational programs. Moreover, hospitals providing acute care may prioritize rapid discharge over thorough education, creating a conflict between efficiency and patient-centered teaching **(Table 1)** (7).

Table 1. Challenges to Nurse-led Patient Education and Possible Solutions (Babu et al.,2025) (7)

Challenges	Description	Possible Solutions
Time Constraints	Nurses have heavy clinical workloads, leaving limited time for education.	Allocate dedicated patient education hours; increase staffing; integrate education into discharge workflow.
Resource Limitations	Lack of educational materials, staff, or infrastructure.	Provide standardized education toolkits; secure funding for programs; use low-cost digital platforms.
Low Health Literacy & Language Barriers	Patients struggle to understand medical instructions due to literacy or language gaps.	Use plain language, pictorial aids, multilingual materials, and teach-back methods.
Cultural Differences	Patients' cultural beliefs may conflict with medical advice.	Provide culturally sensitive education; involve community leaders or cultural mediators.
Complex Medical Regimens	Patients with chronic illnesses face overwhelming self-care requirements.	Break instructions into manageable steps; use digital reminders or follow-up calls.
Limited Family/Caregiver Involvement	Patients lack support at home to reinforce education.	Actively involve families in education sessions; provide caregiver-friendly materials.
Lack of Nurse Training in Education Skills	Not all nurses are trained in effective teaching methods.	Offer training in communication strategies (e.g., teach-back, motivational interviewing).
Technology Underutilization	Limited use of telehealth, apps, or e-learning tools for post-discharge support.	Adopt mobile health apps, video follow-ups, and reminder systems.
Organizational Priorities (Rapid Discharges)	Hospitals may prioritize efficiency over thorough education.	Embed patient education into discharge policies; incentivize hospitals to reduce readmissions.
Policy and Reimbursement Gaps	Education programs often lack financial or policy support.	Advocate for policies that reimburse nurse-led education; integrate education into quality metrics.

Conclusion

Given their role in communicating with patients throughout their treatment and following discharge, nurses play a significant role in reducing the unplanned hospital readmission rates. Adequate discharge planning and post-discharge follow-ups have been reported to significantly reduce readmission rates. However, the implementation of nurse-led patient education is hindered by work overload, limited resources, and a lack of nurse

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training. Overcoming these barriers requires a multidisciplinary collaboration approach involving healthcare professionals, home caregivers, and policies that employ health education as a fundamental part of high-quality care.

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Conflict of interest

There is no conflict of interest.

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Ethical consideration

Non applicable.

Data availability

All data is available within the manuscript.

Author contribution

All authors contributed to conceptualizing, data drafting, collection and final writing of the manuscript.

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