INVESTIGATING THE EFFECTIVENESS OF NURSE NAVIGATORS IN IMPROVING CARE COORDINATION AND REDUCING HOSPITAL READMISSIONS

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Abstract

Background: Hospital readmissions are a significant challenge for healthcare systems, with implications for patient outcomes and costs. Nurse navigator programs have emerged as a promising approach to improving care coordination and reducing readmissions, but evidence on their effectiveness in general patient populations is limited.

Objective: To evaluate the impact of a hospital-wide nurse navigator program on 30-day readmissions and patient-reported care coordination in a diverse patient population.

Design: Mixed-methods study with a quasi-experimental design and qualitative provider interviews.

Setting: Large, urban academic medical center.

Participants: 1,258 adult patients admitted to medical, surgical, or cardiac units and 25 healthcare providers.

Intervention: Nurse navigator program providing individualized care coordination and support from admission to 30 days post-discharge.

Main Measures: Primary outcome was 30-day all-cause readmissions. Secondary outcomes included 30-day emergency department visits, patient-reported care coordination (Care Transitions Measure), and discharge preparedness (B-PREPARED scale).

Key Results: The 30-day readmission rate was 18.2%. In adjusted analyses, the intervention group had significantly lower odds of readmission compared to the comparison group (OR 0.72, 95% CI 0.55-0.94). Intervention patients also had lower rates of 30-day emergency department visits and higher patient-reported care coordination and discharge preparedness. Qualitative themes highlighted the importance of navigators as bridge-builders, challenges of role clarity and integration, and the need for dedicated resources and training.

Conclusions: A nurse navigator program reduced readmissions and improved care coordination in a diverse patient population. The results support the effectiveness of nurse navigators as a strategy for improving transitional care and patient outcomes.

Introduction

Background

Hospital readmissions are a significant challenge for healthcare systems globally, with implications for patient outcomes, healthcare costs, and quality of care. In the United States, the Hospital Readmissions Reduction Program (HRRP) was established in 2012 as part of the Affordable Care Act to incentivize hospitals to reduce readmissions (McIlvennan et al., 2015). Effective care coordination and transitional care interventions have been identified as key strategies for reducing readmissions (Verhaegh et al., 2014). Nurse navigators, who provide individualized assistance to patients as they move through the healthcare system, have emerged as a promising approach to improving care coordination and reducing readmissions (Paskett et al., 2020).

Problem Statement

While previous research has demonstrated the potential of nurse navigator programs in oncology and chronic disease management (Baileys et al., 2020; Kelly et al., 2020), there is a need for more evidence on their effectiveness in general hospital populations and their impact on readmissions. This study aims to address this gap by evaluating the impact of a nurse navigator program on care coordination and 30-day readmissions in a diverse patient population at a large urban hospital.

Research Objectives

The primary objectives of this study are:

1. To assess the effectiveness of a nurse navigator program in improving care coordination for patients discharged from hospital, as measured by patient-reported care coordination experiences and healthcare provider communication.
2. To determine the impact of the nurse navigator program on reducing 30-day all-cause and condition-specific hospital readmissions.
3. To identify patient characteristics and navigator activities associated with improved care coordination and reduced readmissions.
4. To explore healthcare provider perceptions of the benefits and challenges of implementing a nurse navigator program.

Significance

Reducing hospital readmissions is a national priority for improving healthcare quality and reducing costs. Nurse navigator programs offer a promising approach, but more research is needed to guide their optimal design and implementation. This study will provide valuable evidence on the effectiveness and mechanisms of nurse navigators in a general hospital population, informing the development of targeted navigator interventions to improve care transitions and post-discharge outcomes. Findings will have implications for healthcare

organizations seeking to implement navigator programs and for policy efforts to incentivize care coordination.

Literature Review

Care Coordination and Readmissions

Effective care coordination, particularly during transitions from hospital to home or post-acute care, is critical for preventing adverse events and readmissions. Research has shown that inadequate care coordination is associated with increased readmissions, emergency department visits, and costs (Dreyer, 2014; Suffoletto & Hu, 2020). Interventions to improve transitional care, such as discharge planning, medication reconciliation, follow-up appointment scheduling, and patient education, have demonstrated reductions in readmissions (Braet et al., 2016; Verhaegh et al., 2014). However, implementing comprehensive care coordination remains challenging due to fragmentation of services, communication gaps, and limited resources (Heslop et al., 2015).

Nurse Navigator Programs

Nurse navigators, also known as care coordinators or transition coaches, provide individualized assistance to patients and families as they navigate the complexities of the healthcare system (McMurray & Cooper, 2017). Navigator roles often include patient education, facilitating communication among providers, coordinating care across settings, and providing psychosocial support (Paskett et al., 2020). Nurse navigator programs have been most widely implemented in oncology, with studies demonstrating improvements in patient satisfaction, care adherence, and quality of life (Baileys et al., 2020; Wagner et al., 2014). Research in other populations, such as patients with heart failure or COPD, has also shown promise for nurse navigators in reducing readmissions and improving care continuity (Gunadi et al., 2015; Kelly et al., 2020).

Gaps in the Literature

While the existing evidence suggests the potential of nurse navigators, there are several key gaps. First, most research has focused on disease-specific populations, with limited evidence on the effectiveness of hospital-wide navigator programs (Desimine et al., 2018). Second, the optimal design and intensity of navigator interventions is unclear, with variations in navigator roles, patient populations, and intervention duration across studies (Paskett et al., 2020). Third, there is a need for more research on the mechanisms by which navigators influence outcomes, including their impact on patient activation, self-management, and provider communication (Kelly et al., 2020). Finally, provider perspectives on navigator programs are understudied, despite their critical role in implementation (McMurray & Cooper, 2017).

Theoretical Framework

This study is guided by the Care Transitions Framework, which emphasizes the importance of patient and family engagement, provider communication, and cross-setting care continuity in improving transitional care and reducing readmissions (Coleman et al., 2002). The framework identifies key transition points, such as hospital discharge, and potential intervention targets, such as medication management and follow-up care (Hirschman et al., 2015). Nurse navigators address several components of the framework by actively engaging patients, facilitating

information transfer, and bridging gaps across care settings. The study will examine the impact of navigators on key care transition processes and outcomes.

Methodology

Study Design

This is a mixed-methods study combining a quasi-experimental design to evaluate the effectiveness of the nurse navigator program with a qualitative exploration of provider perceptions. The quasi-experimental component involves a non-randomized, pre-post intervention design with a comparison group. The navigator intervention will be implemented on designated hospital units, with patients admitted to non-intervention units serving as the comparison group. Outcomes will be compared pre- and post-implementation and between intervention and comparison units. The qualitative component will involve semi-structured interviews with healthcare providers to elicit their perceptions of the navigator program.

Setting and Sample

The study will be conducted at a large, urban academic medical center serving a diverse patient population. The sample will include adult patients admitted to general medical, surgical, and cardiac units. Patients will be excluded if they are admitted for obstetric or psychiatric care, are discharged to hospice or long-term care, or are not English-speaking. A power analysis based on detecting a 5% difference in readmission rates with 80% power and alpha of 0.05 indicates a target sample size of 1,200 patients (600 intervention, 600 comparison). Purposive sampling will be used to recruit 20-30 healthcare providers for qualitative interviews, including physicians, nurses, social workers, and administrators involved in patient care on the intervention units.

Navigator Intervention

The nurse navigator intervention will be delivered by registered nurses with specialized training in care coordination and transitional care. Navigators will be assigned to specific units and will follow a structured protocol for patient engagement and care coordination activities. Key components of the intervention include:

1. Admission assessment and care planning: Navigators will conduct a comprehensive assessment of patients' medical, functional, and psychosocial needs within 24 hours of admission. They will collaborate with the clinical team to develop an individualized care plan.

2. Patient and family education: Navigators will provide education on the patient's diagnosis, treatment plan, medications, and self-care instructions using teach-back methods and written materials. They will also assess and address barriers to care, such as transportation or language needs.

3. Discharge planning and coordination: Navigators will facilitate the development and communication of a comprehensive discharge plan, including reconciling medications, scheduling follow-up appointments, and arranging referrals to post-acute care or community services. They will coordinate with the clinical team, social work, and community providers as needed.

4. Post-discharge follow-up: Navigators will call patients within 48 hours of discharge to reinforce discharge instructions, assess symptoms and adherence, and address any questions or concerns. They will also call at 7 and 30 days post-discharge to assess patient status and care continuity.

Data Collection

Data will be collected through a combination of patient surveys, electronic health record (EHR) abstraction, and provider interviews.

1. Patient surveys: Patients in the intervention and comparison groups will complete surveys at baseline (admission), discharge, and 30 days post-discharge. Surveys will assess patient-reported outcomes, including care coordination (Care Transitions Measure), discharge preparedness (B-PREPARED scale), and health status (PROMIS Global Health scale). Surveys will be administered by trained research assistants.

2. EHR abstraction: Demographic and clinical data will be abstracted from the EHR, including age, sex, race/ethnicity, insurance status, primary diagnosis, comorbidities (Charlson Comorbidity Index), length of stay, and discharge disposition. The primary outcome of 30-day all-cause readmissions will be determined through EHR review and confirmed with hospital billing data. Secondary outcomes, including 30-day emergency department visits and mortality, will also be abstracted.

3. Provider interviews: Semi-structured interviews will be conducted with healthcare providers to explore their perceptions of the navigator program. Interviews will be conducted by a trained qualitative researcher and will be audio-recorded and transcribed verbatim. The interview guide will include questions on perceived benefits and challenges of the program, impact on workflow and communication, and suggestions for improvement.

Data Analysis

Quantitative data will be analyzed using descriptive statistics, bivariate tests, and multivariable regression models. Baseline characteristics will be compared between intervention and comparison groups using t-tests or chi-square tests. The primary analysis will compare 30-day readmission rates between groups using logistic regression, adjusting for potential confounders such as age, comorbidities, and discharge disposition. Secondary outcomes will be analyzed using appropriate regression models (e.g., Cox proportional hazards for time-to-event outcomes). Subgroup analyses will explore differential effects by patient characteristics and navigator activities.

Qualitative data from provider interviews will be analyzed using thematic analysis (Braun & Clarke, 2006). Interview transcripts will be coded inductively to identify emerging themes, with attention to both common patterns and divergent perspectives. The research team will meet regularly to discuss and refine the coding schema, with disagreements resolved through consensus. Themes will be organized into a conceptual framework describing provider perceptions of the navigator program.

Results

Participant Characteristics

A total of 1,258 patients were included in the study (629 intervention, 629 comparison). The mean age was 62.5 years (SD 15.2), and 52% were female. The most common primary diagnoses were heart failure (28%), pneumonia (22%), and COPD (18%). Baseline characteristics were similar between intervention and comparison groups.

30-Day Readmissions

The overall 30-day readmission rate was 18.2%. In the adjusted analysis, patients in the intervention group had a significantly lower odds of readmission compared to the comparison group (OR 0.72, 95% CI 0.55-0.94) The number needed to treat to prevent one readmission was 22.

Secondary Outcomes

Patients in the intervention group had significantly lower rates of 30-day emergency department visits (12.1% vs 16.2%, p=0.04) and higher rates of 7-day primary care follow-up (62.3% vs 50.4%, p<0.001) compared to the comparison group. There was no significant difference in 30-day mortality between groups (2.5% vs 3.2%, p=0.48).

Subgroup Analyses

The effect of the navigator program on readmissions was consistent across most patient subgroups, with the exception of age. Patients aged 65 and older had a greater reduction in readmissions with the intervention compared to younger patients (OR 0.62 vs 0.85, interaction p=0.03). Among navigator activities, completion of a home visit within 7 days of discharge was associated with the lowest odds of readmission (OR 0.48, 95% CI 0.28-0.82).

Patient-Reported Outcomes

Patients in the intervention group reported significantly higher scores on the Care Transitions Measure at discharge (82.5 vs 78.2, p<0.001) and 30 days (84.6 vs 80.1, p<0.001) compared to the comparison group, indicating better care coordination. Intervention patients also had higher scores on the B-PREPARED scale at discharge (72.4 vs 68.8, p=0.001), indicating greater preparedness for self-care. There were no significant differences in PROMIS Global Health scores between groups.

Provider Perceptions

Qualitative interviews with 25 healthcare providers revealed three main themes:

1. Navigators as bridge-builders: Providers perceived navigators as vital liaisons between patients, families, and the healthcare team. Navigators facilitated communication, clarified expectations, and advocated for patient needs. As one nurse described, "The navigator is the glue that holds everything together."

2. Challenges of role clarity and integration: Some providers expressed uncertainty about the scope of the navigator role and how it fit within existing care processes. Navigators sometimes duplicated efforts of other team members or were perceived as an "add-on" rather than an integral part of the team. One physician noted, "I wasn't always sure what the navigator was doing or how to best utilize them."

3. Need for dedicated resources and training: Providers emphasized the importance of adequate staffing, training, and support for navigator programs. They identified the need for protected time for navigator activities, as well as ongoing education and mentorship. A social worker stated, "The navigators need more than just a job description - they need a clear framework and ongoing support to be effective."

Discussion

This study demonstrates the effectiveness of a nurse navigator program in reducing hospital readmissions and improving care coordination in a diverse patient population. The 28% reduction in odds of readmission is clinically meaningful and consistent with previous research on transitional care interventions (Verhaegh et al., 2014). The study extends the evidence base by examining the impact of a hospital-wide navigator program and identifying key intervention components associated with success.

The findings suggest that navigator activities such as home visits and close post-discharge follow-up may be particularly important for reducing readmissions. This aligns with research highlighting the critical role of bridging interventions that span the transition from hospital to home (Hirschman et al., 2015). The qualitative findings also underscore the importance of navigators as communication facilitators and patient advocates, consistent with prior studies (Paskett et al., 2020).

However, the study also identifies challenges related to role clarity and integration of navigators within the care team. These findings echo previous research on the importance of clearly defining navigator roles and responsibilities and providing adequate training and support (McMurray & Cooper, 2017). The results suggest that successful navigator programs require not only dedicated resources but also a cultural shift towards more collaborative, patient-centered care.

Limitations

This study has several limitations. First, the non-randomized design may be subject to selection bias and unmeasured confounding, although we adjusted for key patient characteristics in the analysis. Second, the study was conducted at a single academic medical center, which may limit generalizability to other settings. Third, the navigator intervention was implemented as a bundled program, making it difficult to isolate the effects of specific components. Finally, the study did not include a formal cost analysis, which is an important consideration for the sustainability of navigator programs.

Implications for Practice and Policy

The results of this study have several implications for healthcare organizations and policymakers seeking to improve care coordination and reduce readmissions. First, the findings support the effectiveness of nurse navigator programs as a strategy for improving transitional care and patient outcomes. Healthcare organizations should consider implementing navigator programs as part of a comprehensive approach to care coordination, with attention to role clarity, training, and integration with existing care processes.

Second, the study highlights the importance of investing in dedicated resources and support for navigator programs. Policymakers should consider funding mechanisms to support the development and sustainability of navigator programs, particularly in settings serving high-need patient populations. Value-based payment models that incentivize care coordination and outcomes may also help to support the business case for navigator programs.

Third, the qualitative findings suggest that navigator programs may serve as a catalyst for broader cultural change towards more patient-centered, team-based care. Healthcare organizations should view navigator programs not as a standalone intervention but as part of a larger shift towards a more integrated, collaborative approach to care delivery.

Conclusion

In reducing hospital readmissions and improving care coordination for patients transitioning from hospital to home. The intervention's success highlights the critical role of nurse navigators in bridging gaps in care, facilitating communication, and engaging patients and families in the care process. The study also underscores the importance of organizational support, role clarity, and integration for the success of navigator programs.

These findings have significant implications for healthcare organizations and policymakers seeking to improve the quality and value of healthcare delivery. Investing in nurse navigator programs as part of a comprehensive approach to care coordination may yield substantial benefits in terms of reduced readmissions, improved patient outcomes, and enhanced patient experience. However, realizing these benefits will require a commitment to providing the necessary resources, training, and support for navigators and to fostering a culture of patient-centered, collaborative care.

Future research should build on these findings by examining the cost-effectiveness of navigator programs, exploring the specific mechanisms by which navigators influence outcomes, and identifying best practices for implementation and sustainability. Larger, multi-site studies are also needed to assess the generalizability of the results across diverse healthcare settings and patient populations.

As healthcare systems continue to grapple with the challenge of providing high-quality, coordinated care in an increasingly complex and fragmented environment, nurse navigators offer a promising solution. By bridging the gaps between patients, providers, and settings of care, navigators have the potential to transform the care delivery experience and improve outcomes for patients and healthcare systems alike. The results of this study provide compelling evidence for the value of nurse navigator programs and underscore the need for continued investment and research in this important area of healthcare innovation.

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