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NURSES' AND PATIENTS' PERCEPTIONS OF THE AVAILABILITY
OF POST-HOSPITAL INSTRUMENTAL SUPPORT AS A PREDICTOR
OF 30- AND 60-DAY ACUTE CARE UTILIZATION

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ABSTRACT

Social support is now part of the social determinants of health objective in Healthy People 2030. Positive social support improves health and well-being. Social support is concerned with people having the support they need within the community, including interacting and communicating with others on a regular basis. Instrumental support is a type of social support that is action oriented, involving one person directly assisting another person. A concept analysis of instrumental support was completed and revealed that the concept is well defined, but the terms used to describe it vary. Other terms in the research literature, most commonly "tangible support", are used in the same context as "instrumental support". In addition, tangible support and instrumental support were used interchangeably by some researchers. However, "instrumental support" is the most common term used in the health-related research literature and has been identified as essential for people recovering at home after a hospitalization. A lack of instrumental support has been linked to an increased risk of hospital readmission. A scoping review completed on the topic of social support and hospital readmissions identified instrumental support as the specific type of social support needed by people after a hospital stay.

Nurses spend time interacting with patients and their family members in the acute care setting. They assess the post-discharge needs of the patient as well as the potential ability of the caregiver to provide needed help at home after discharge. Using data from an ongoing study of patient readiness for hospital discharge, we used responses to two items on the Readiness for Hospital Discharge Survey (RHDS) to assess nurses' and

patients' perceptions of the potential instrumental support the patient would have at home after discharge. Findings revealed that nurses, as compared to patients, perceived patients would have less instrumental support after discharge. In addition, findings revealed that nurses' perceptions of the amount of support the patient would have at home were related to subsequent acute care utilization whereas patients' perceptions of expected support were not related to subsequent utilization in most cases. When there was a relationship between patients' perceptions of expected support and subsequent acute care utilization, it was in the wrong direction such that perceptions of more available support were related to more acute care use following the initial hospital discharge. Instrumental support is an important element of hospital to home care transitions. Accurate ways to assess it during the discharge planning process are needed, and patients and caregivers are critical members of the team planning for care beyond the hospital setting.

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CHAPTER 1

INTRODUCTION

The hospital to home care transition period can lead to poor health outcomes and the risk for hospital readmission. Despite the ongoing national priority to improve hospital to home care transitions, progress has been slow. Between 2010 and 2016, readmission rates improved by only 0.3% (i.e., from 14.2% to 13.9%) for patients with all types of insurance and increased for uninsured patients (i.e., from 10.4 to 11.8) (Bailey, 2019). The Health Care Cost and Utilization Project reported over eight million readmissions in 2016, with an average cost of $14,400 per readmission (Bailey, 2019). Legislation passed in 2012, now penalizes hospitals that experience a higher-than-expected readmission rate for patients within 30 days of discharge (Desai et al., 2016). For this reason, hospital systems and researchers are focusing on this time frame for readmission. The research conducted in the current study extended the time of focus to 60 days following discharge to determine if patient needs and negative outcomes are significant beyond the 30-day mark. It also included emergency department visits and observation stays in addition to hospital readmissions. From January 2012 to October 2015, the number of total hospital revisits after discharge increased for Medicare patients when evaluating all three types of care, although the number of readmissions decreased (Wadhera et al., 2019). The increase in emergency department visits and observation stays, may be due to efforts to reduce total readmissions and manage patients in the emergency departments and observation units.

Patients transitioning from the hospital to home are vulnerable. Hospitalized patients often experience disturbed sleep patterns, decreased nutritional intake, and pain (LeClair et al., 2019), which can elicit jet-lag type effects, especially among older adults (Krumholz, 2013). The end of a hospital stay does not equate to complete recovery, an

acute illness can lead to a significant decline in older adults' functional abilities after discharge (Lafont et al., 2011), and patients continue the recovery process at home. Zisberg et al., found that at a one-month follow-up evaluation many older adults still had significant deficits when compared to their pre-illness level of functioning (Zisberg et al., 2011). The inability to return to their preadmission state of functioning may impede their recovery and increase the risk for hospital readmission, especially if known risk factors for readmission are already present (Krumholz, 2013) or if unexpected events or complications occur (Alimadadi et al., 2020).

For several weeks after discharge, older patients experience a period of increased fatigue, lack of energy and motivation, decreased muscle strength and decreased coordination (Seben et al., 2020). These symptoms can lead to increased vulnerability and contribute to decreased physical activity, increasing the risk of injury (Krumholz, 2013). Seben and Krumholz both reported that disturbed sleep patterns, decreased nutritional intake, pain, new medications, and inactivity are phenomena older adults frequently experience during hospital admission and may negatively impact their ability to function, think, heal, and maintain independence during the immediate discharge period. The presence of these symptoms may hamper a person's ability to provide proper self-care and could lead to self-neglect and rehospitalization (Dong & Simon, 2015). Consequently, instrumental support, help with personal and medical needs from family, friends, or neighbors, (White et al., 2015) during the time patients are recovering at home, may be an essential factor in the successful transition from hospital to home and recovery without negative outcomes.

In a study evaluating older adults who were previously independent and eager to return home after a hospital admission, researchers found that patients often experienced a need for assistance and were no longer independent upon discharge (Seben et al., 2019). Many required help with activities of daily living, meal preparation, medical care, transportation, and shopping, and some were insecure in their home environment, despite having perceived they were ready for discharge. Patients often found that they were unable to return to their normal activities and routines such as hobbies, regular physical activity, and socializing with friends and family after a hospitalization (Seben et al., 2019). They described fatigue, muscle weakness, a fear of falling, and loss of appetite, effects of their hospital stay, in addition to apathy and a lack of motivation and energy, all characteristics of post-hospital syndrome (Krumholz, 2013). Patients have also reported confusion regarding post-discharge care and medication management (LeClair et al., 2019) which may be a result of the effects of post-hospital syndrome as well.

Patients may have complex medical care needs after a hospitalization that were not present prior to their illness. This may lead to a period of increased risk and vulnerability especially for older adults' post-discharge and thus, a need for assistance in the form of support in the immediate post-discharge period. Providing assistance in the home environment to support and aid an older adult in the recovery process may decrease the incidence of rehospitalization (Donaghy et al., 2018).

Unfortunately, assessing patients' resources for instrumental support has not been routine prior to hospital discharge (Weiss et al., 2019). However, at a large health system in the Southeastern United States, the Palmetto Readiness Evaluation and Discharge Interventions (READI-2) Study assesses patient readiness for discharge using a

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standardized tool, the Readiness for Hospital Discharge Scale (RHDS) to screen all

patients for the risk of readmission before discharge. Key questions on the RHDS

evaluate patients' and nurses' perceptions of instrumental support that will be available to

the patient following discharge. READI-2 provides a mechanism to study a critical gap in

knowledge about perceptions of nurses' and patients' regarding expected instrumental

support and their association with acute care received after discharge.

Instrumental Support as a Subcategory of Social Support

Having adequate social support is linked to better health outcomes, especially in

the older population (Courtin & Knapp, 2017) and a lack of social support can lead to

rehospitalization (Donaghy et al., 2018). Research findings suggest that having a strong

social network after a stressful life-event, for example a hospitalization, can contribute to

mental and physical wellbeing (Morelli et al., 2015). Social support is considered

informal support, provided by people within one's social circle (Kaplan et al., 1977).

Instrumental support, a type of social support, is defined as care provided in the form of

an action, for example, providing assistance with personal care, preparing meals,

transportation, and assisting with medical needs (Cohen & Wills, 1985). Considering the

characteristics of instrumental support, and understanding the needs people have after a

hospitalization, the necessity for this specific type of social support is understandable.

People depend on one another for assistance and having adequate instrumental support

may positively impact the recovery process.

Previous Research on Instrumental Support and Acute Care After Discharge

In a group of patients with diabetes who experienced a hospital readmission, more

than 50% of them reported a lack of instrumental support as a contributing factor to their

inability to follow their discharge plan of care (Rubin et al., 2014). Lack of tangible assistance reported by older patients may lead to increased emergency department visits and unplanned hospitalization with multiple chronic conditions, reinforcing the concept that having instrumental help at home may provide the support a person needs to manage chronic diseases (O'Conor et al., 2019). There is also research suggesting that instrumental support is more highly valued and accepted if the person providing the support conveys a sense of caring, indicating that the support needs to come from who does truly care for the person (Semmer et al., 2008). Informal social support is part of a give-and-take relationship There are times when one person needs assistance and other times when they deliver assistance, which strengthens the bonds of social relationships and networks (Chan et al., 2019).

Study Purpose and Specific Aims

The purpose of this study was to evaluate the association between nurses' and patients' perceived availability of post-discharge instrumental support and the incidence of acute care utilization after discharge. This study was innovative because it looked at a specific type of social support, not the broad category and used a discharge readiness assessment tool that was integrated into the electronic health record (EHR) at three hospitals to assess perceptions of available instrumental support. Knowledge gained from this study provides information for additional studies that include assessing effectiveness of support after discharge to determine if the support meets the patient's need and is appropriate. Three aims guided this study, each relating to the concept of instrumental support and hospital readmission.

Specific Aim 1: Evaluate the relationship between the patient's perceived availability of support for post-hospital assistance with personal and medical-related tasks after discharge and the incidence of acute care utilization (emergency department visit, observation stay, readmission) within 60 days of an index hospitalization discharge.

Specific Aim 2: Evaluate the association between the nurse's assessment of the patient's perceived availability of support for personal and medical-related tasks after discharge and the incidence of acute care utilization (emergency department visit, observation stay, readmission) within 60 days of an index hospitalization discharge.

Specific Aim 3: Evaluate the congruence between and the contribution of patients and nurses' ratings of instrumental support and the incidence of acute care utilization (emergency department visit, observation stay, readmission) within 60 days of an index hospital discharge.

Theoretical Framework

The social-ecological theory emphasizes the importance of examining the environment in which a person exists (Bronfenbrenner, 1977). This approach accounts for the impact the environment has on a person's development, health, and well-being (McLeroy et al., 1988) using inter-nestled circles representing systems that impact and influence human development. The four levels of the model adapted to care transitions include the individual, relationships, healthcare, and community (figure 1.1). The individual level focuses on developmental history, educational and health literacy, and homecare recovery management. In this level the patient and nurse perception of available help at home after discharge is important for this research project. The next level is relationships with family, friends, and neighbors. Having a network of people

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available to help with personal and medical at home after discharge is important during care transitions. The next level is healthcare; having a relationship with care providers will provide patients with comfort level after discharge to enable them to call with concerns and questions, which is important during the transition process. Without known providers to contact, a patient may not seek care when symptoms begin and resort to seeking care in the emergence department. The outermost circle is community. The physical environment is important during the transition period. Availability of a walkable environment, health care providers nearby, accessible grocery stories and pharmacies, community services such as transportation and meal delivery, and places for socialization are all important factors that affect recovery. Using this model to guide research related to care transitions and instrumental support allows for a holistic view of the inter-related factors and processes that can impact the transition process.

Another theory used to guide this research is the Conceptual Model of Relationship Between Care Transition Outcomes desired by patients and caregivers and care transition services and provider behaviors across the care continuum which identifies elements of successful transitions (Mitchell et al., 2018). This model identifies five key processes to transitional care that align with instrumental support and care transitions. They include communication that conveys compassion and empathy, anticipating patient and caregiver needs to support care after discharge, collaborative discharge planning, discharge plans that include actionable information, and providing uninterrupted care during the pre- to post-discharge period (Mitchell et al., 2018). Ensuring that the key processes are met leads to a safe transition in which the patient and caregivers were able to adhere to discharge plans and meet desired outcomes (Mitchell et al., 2018). When

these elements are in place the patient feels cared for and cared about by the healthcare professionals and were more likely to follow the discharge plan of care. The association of whether someone has anticipated help at home after discharge and is prepared for discharge can be evaluated with the elements of this model. Patients and caregivers need to feel they have been given appropriate instructions and can manage care at home, so they are less anxious and more confident during the transition period.

Methods

A secondary analysis of data from the READI-2 study, which is an ongoing study taking place within three hospitals in a healthcare system in South Carolina, was completed. The study is being conducted in collaboration with researchers at the University of South Carolina to address preventable rehospitalizations. The READI-2 study uses two tools to help with discharge planning. Upon admission, the Early Screen for Discharge Planning is used and includes the patient's age, living status prior to admission, Rankin disability instrument, and a self-rated walking assessment (Holland et al., 2017). The other tool is the short form of the RHDS that has two parts. The RHDS is an eight-item instrument completed separately by the patient (PT-RHDS) and the nurse (RN-RDHS), to assess whether the patient is ready for discharge. Both parts of the RDHS have the same questions but are phrased to ascertain the patient perspective and the nurse perspective. Scores range from 0-10 on each part, with 0 indicating the patient is not ready for discharge and 10 indicating the patient is ready for discharge (Weiss et al., 2014). At least 4 hours prior to written discharge orders, the nurse asks the patient or a significant other to respond to the eight items on the PT-RHDS and records those responses. After recording and reviewing the patient responses, the discharging nurse

completes the RN-RHDS. Based on the score the nurse either continues with the discharge process, or initiates interventions to address patient needs.

For all three specific aims, quantitative analysis was completed using data from a subset of the READI-2 study based on patients' and nurses' respective responses to questions seven and eight of the PT-RHDS and RN-RHDS. These two questions specifically address the availability of instrumental support, asking if the patient will have help at home with personal and medical care after discharge. Descriptive statistics and logistical regression were used to complete the data analysis. The data set was evaluated for missing data, patients over the age of 18 and patients who were missing either the PT-RHDS or RN-RHDS. A filter was applied to the dataset to exclude any patient who had an admission in the 90-days prior to the index admission being used in the evaluation.

Patient demographics including age, race, ethnicity, gender, and marital status were analyzed using descriptive statistics. Two independent variables were created for questions seven and eight, one from the RN-RHDS and another from the PT-RHDS, using the mean, summed score for each. Dependent variables included data regarding 0-30-day and 31-60 day-emergency department (ED) visits, observation (OBS) stays, and hospital readmissions. Two combined variables, one for 0-30 and one for 31-60-day services were created that included all three types of acute care received. Bivariate dependent variables were created indicating whether the patient did or did not receive a service in all three categories ED visits, OBS stays, and hospital readmissions. Binary logistical regression was executed for each dependent variable using the covariates: married, Hispanic, White, age, mean expected support RN-RHDS score, and mean

expected support PT-RHDS score. IBM SPSS version 26 (Armonk, NY, USA) was used for data analysis.

Manuscripts and Target Journals

The first manuscript for this dissertation is a scoping review of social support. Because instrumental support is a form of social support reviewing the literature to identify a gap related specifically to instrumental support was an important step to identify the need for additional research. Although there are many forms of social support, including emotional, instrumental, informational, companionship, and esteem (Bruhn, 1991), instrumental support was identified as the type most needed after hospital discharge (Cakir et al., 2017; Dupre et al., 2018; Happ et al., 1997; Rubin et al., 2014; Strunin et al., 2007; White et al., 2015). This manuscript is creating the foundation for the research and all three specific aims. Many studies focused on social support in general, but not all identified which type of social support was most often needed by people during the transition and post-discharge recovery period at home. This concept analysis was prepared and submitted to the *Journal of Clinical Nursing* and is in the peer review process.

The second manuscript for this dissertation is a summary of the quantitative results of the data analysis and is being prepared for submission to the *Journal of Nursing Scholarship* for consideration of publication. This manuscript provides data supporting all three specific aims, discussing the results of nurse and patient survey responses and the likelihood of a hospital revisit after discharge. Data discussing descriptive statistics, results from independent-samples t-tests, and binary logistic regression were discussed.

T-tests were done to determine if patients with higher or lower expected support scores on the RN-RHDS and/or PT-RHDS were more likely to have a hospital revisit after discharge (ED visit, OBS stay, readmission). The data analysis showed that patients with higher expected support scores on questions seven and eight on the RN-RHDS were less likely to receive a service within 60 days of discharge than those with lower scores. The scores were significant for the RN-RHDS on the two questions related to instrumental support for the combined service variable at both 30 days and 31-60-days, ED visits for 30 and 31-60-days and OBS stays for 31-60-days. Patients who did not experience a hospital revisit were higher than those who did. T-scores were significant for the two PT-RHDS questions related to instrumental support for ED visits within 30 and 31-60-days of discharge, OBS stays within 31-60-days, and the acute care combined variable at 31-60-days. Patients who did not have a hospital revisit were noted to have higher scores than those who did.

Binary logistic regression analysis was done to determine if there was a statistical significance in patient expected support scores on the RN-RHDS and PT-RHDS and hospital revisits after discharge. Patients with lower expected support scores on the RN-RHDS were more likely to have an acute care visit within 31-60 days based on the combined acute care variable. The results of this analysis demonstrate that evaluating patient care received in the acute care setting beyond the 30-day mark may provide valuable information related to negative patient outcomes suggesting that the need for instrumental support after discharge may extend well beyond 30-day.

The third manuscript for this dissertation is a research brief targeted to case management clinicians and will be submitted to the *Professional Case Management*

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Journal. It provides an overview of how 60-day post-discharge, acute care was associated with the need for instrumental support and discusses concepts important for case managers to consider during the discharge planning process. Roughly 30% of acute care provided after discharge happened during the 31–60-day time, indicating a need to provide continued assessment and support for patients beyond 30 days. The need for instrumental support after discharge may be due to the effects of post-hospital syndrome, which can be present beyond the 30 and even 60-day mark after discharge, noting the need for continued instrumental support. Another factor important for case managers to consider is that family and friends who provide instrumental support may only be available on short-term, and then need to return home or work. At that time, the person may not be completely independent, and the risk of undesired outcomes may increase.

Summary

The concept of instrumental support is still not widely used in the research community when discussing and describing the care a patient receives from informal caregivers in the home environment after hospital discharge. Dissemination of the results of this research, will promote the use of the concept as well as provide additional evidence supporting the need to assess and, when needed, intervene to deliver appropriate post-discharge instrumental support to aid in patients' recovery processes and positively impact their health outcomes.
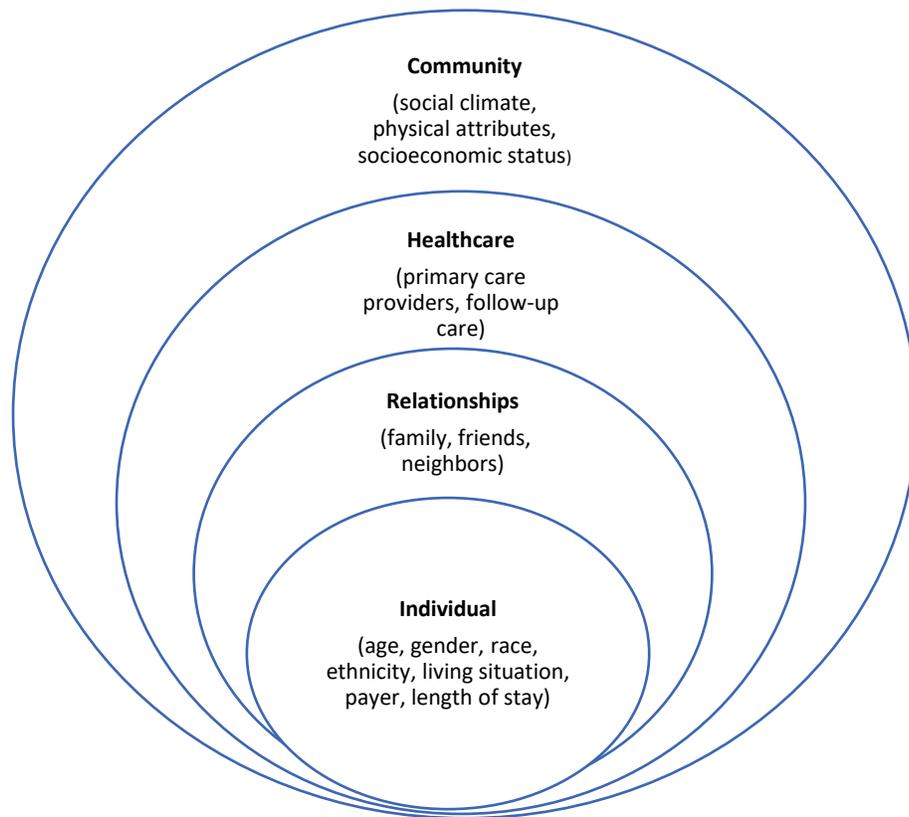
Figure 1.1 Social Ecological Model for Instrumental Support Related to Care Transitions (B. Schultz 2020)

CHAPTER 2

SCOPING REVIEW: SOCIAL SUPPORT IMPACTS HOSPITAL

READMISSION RATES

Abstract

Aims and objectives: To review and synthesize the current literature on social support and hospital readmissions rates.

Background: Hospital readmission rates have not declined significantly since 2010 despite efforts to identify and implement strategies to reduce readmissions. After discharge, patients often report the need for help at home with personal care, medical care, and/or transportation. Social factors can positively or negatively affect the transition from hospital to home and the extended recovery period experienced by patients.

Methods: Published primary studies in peer reviewed journals, written in English, assessing the adult medical/surgical population, and discussing social support and hospital readmission rates were included. The PRISMA-ScR checklist was used to evaluate this manuscript.

Results: The search resulted in 2919 articles. After removing duplicates and reviewing content for the inclusion and exclusion criteria, 23 articles were selected for review. Social support is provided by those within one's social circle. There are several types of social support and depending on the needs to the patient, the type of social required and recovery period at home after a hospitalization was instrumental support, assistance with daily personal and medical care, and transportation. Patients who lacked adequate social support after discharge were at an increased risk of hospital readmission.

Relevance to clinical practice: Identifying factors, such as social support, that may impact hospital readmission rates is important for quality hospital to home care transitions. Assessing patients' specific needs and available type social support to meet

those needs may be an essential part of the discharge planning process to decrease the

risk of hospital readmission.

Keywords: social support, hospital readmission risk, transitions of care, post-acute care.

Despite numerous efforts to decrease preventable hospital readmissions within 30 days of discharge, rates of readmissions have remained largely stable (Bailey, 2019). The 2010 enactment of the Patient Safety and Affordable Care Act (ACA) included provisions to curb healthcare spending and increase quality of care, one of the goals was a reduction in preventable readmissions (United, 2010). Several value-based programs were implemented by the Centers for Medicare and Medicaid Services (CMS) as a result of the ACA, including the Hospital Readmission Reduction Program (HRRP). As with other incentive programs, the objective of the HRRP is to reward providers with higher payments as they meet pre-established performance targets for improved outcomes (i.e., lower readmission rates). Despite efforts to expand HRRP risk-adjustment criteria to account for conditions that often mediate readmission risk, there has not been a significant change in readmission rates (e.g., insurance type, low socioeconomic status) (McCarthy et al., 2019). Identifying mechanisms to curb escalating readmission rates has been the focus of numerous studies over the last decade (Bricard & Or, 2019; Cardarelli et al., 2018; Hansen et al., 2011; Heitkam, 2019; Kripalani et al., 2014; Strunin et al., 2007; Warchol et al., 2019; Wee et al., 2014). The challenge is that hospitals and communities have different characteristics and resources, thus efforts must be tailored to the institution and the community's at-risk patient population to reduce hospital readmissions (Goldgrab et al., 2019).

In the U.S., approximately 13% of all hospital readmissions are considered preventable (van der Does et al., 2020). The leading reasons for readmission include medication, diagnostic, or management problems (van der Does et al., 2020), fragmented or inadequate follow-up care, and insufficient social support (Cakir et al., 2017), as well

as lower socioeconomic status and insurance type (Bell et al., 2019). Among the general population, the most common diagnoses related to readmissions are cardiovascular disease, pulmonary disease, diabetes, cancers, and mental health conditions (Chopra et al., 2016). Acute myocardial infarction, heart failure, and pneumonia are the leading causes for readmissions among older patients (Hines et al., 2006). Readmission risks among elderly patients are often amplified due to other concurrent conditions, such as deficits performing activities of daily living and the inability to follow their discharge plan of care due to fatigue, apathy, and generalized weakness experienced as a result of a hospital stay (Seben et al., 2019).

The discharge planning process includes the integral components of identifying individual needs and ensuring the needs are met after hospital discharge, particularly when the patient is discharged home. Additional challenges are posed by discharged patients that are socially isolated. Social isolation, defined as the lack of interaction with family, friends, and neighbors, indicates the lack of a social network to provide support during times of need (Greysen et al., 2014). Social isolation is a social barrier and indicates a lack of, or minimal contact with others (Longman et al., 2013). The lack of social support, socialization, or weak social relationships increases the risk of hospital readmission, especially in the older population (Calvillo-King et al., 2013; Longman et al., 2013; Mistry et al., 2001; Valtorta et al., 2018). From a patient's perspective, increased risk of readmission resulted from the inability to administer self-care, manage symptoms, and understand discharge instructions (Cakir et al., 2017). This coupled with either social isolation or a lack of social support may present an even greater risk of readmission. Screening for the lack of support prior to discharge may help clinicians

predict patients at risk for readmission (Agtarap et al., 2018) and provide an opportunity

to plan for appropriate support during the post-discharge recovery period.

Background

Social support is having people, friends, family, or neighbors, within one's

supportive network, who display a sense of caring and provide assistance when needed

(Cohen & Wills, 1985). Having adequate social support contributes to a person's overall

well-being and indicates a level of engagement with other people (Bruhn, 1991). Forms

of social support include emotional, instrumental, informational, companionship, and

esteem (Barrera, 1986). The need for social support changes throughout one's lifespan

and is unique to different individuals, groups, and communities (Bruhn, 1991). Each type

of social support meets a different need during a time of stress. For example, emotional

support is given by listening, instrumental by helping with tasks, informational by

providing help with understanding, companionship by being physically present, and

esteem by reinforcing self-worth (Cohen & Wills, 1985). Social support is part of a give

and take relationship, there are times when someone needs help and other times when

they are meeting the needs of someone else. A person may have a need for assistance

after an acute illness or surgery due to decreased or impaired mobility, fatigue, or a

wound that needs attention. Those needs are often met within one's social circle or family

group.

Social support is identified as a social determinant of health in Healthy People

2030 (*Healthy People 2030*, 2020). Social support is included in the Social and

Community Context (Figure 2.1), acknowledging that social support is important for

improving health and well-being (*Healthy People 2030*, 2020). The assurance that social

support is available enables one to cope with potentially overwhelming situations;

creating a buffering effect that empowers a person to manage stress and life challenges

(Cohen & Wills, 1985; Schwarzer & Knoll, 2007).

Transitional care models have been found to be effective in reducing post-

discharge healthcare utilization by incorporating multiple interventions. The Transitional

Care Model (TCM), Care Transitions Intervention (CTI), Better Outcomes for Older

Adults Through Safe Transitions (BOOST) and Project Re-engineered Discharge (RED)

all focus on hospital to home transitions and are multi-focused (Enderlin et al., 2013).

They all incorporate early intervention, patient and family education, and patient-centered

care. The models provide tools for healthcare professionals to aid in the discharge

process. Enderlin et al. (2013) point out that an important element of a successful

transition is identifying and including caregivers, family, friends, neighbors, and partners

who can provide the patient with assistance after hospitalization in the discharge planning

process. Including informal support persons in the discharge process, as part of the

multidisciplinary team, may lead to a safer transition at home (Kripalani et al., 2014). The

assistance given by significant others during the recovery period at home is defined as

instrumental support, which is the act of active assistance and hands-on care, for

example, assistance with personal care, medical care, meal preparation, and

transportation (Ashida & Heaney, 2008; Gottlieb & Bergen, 2010).

When evaluating factors that increase the incidence of readmission, researchers

have evaluated reasons for readmissions. Researchers who conducted a retrospective,

cross-sectional record review study found that 46% of readmissions were disease-related,

meaning that they were due to the natural progression of disease and were not impacted

by either provider or patient factors (Fluitman et al., 2016). Patient-related factors in the study were responsible for 15% of readmissions, for example, lack of following the discharge plan, and deemed beyond the control of the healthcare staff. The variable related to hospital readmission noted as preventable and that presented the need for intervention was lack of care coordination or patient monitoring after discharge, which was responsible for 33% of readmissions. Either the patient's care was not coordinated with providers who would provide follow-up care during the transition process, or the patient was not appropriately followed and monitored after discharge. Considering the information related to root causes and efforts to reduce readmission rates, the need to ensure the continuation of care post-discharge may be a key factor to successful recovery at home and to reduce readmissions.

Social support is an umbrella term that includes many different forms of support. Research studies that either focus on or include the concept of social support as a variable for hospital readmissions, may not indicate the need for a specific type of social support. The impact of social support may depend on the specific type of support provided. Patients have specific needs for support based on their situation, for example emotional support during personal loss, instrumental support after a serious illness, or informational support when faced with a complex diagnosis. This lack of distinction creates a need to evaluate social support in the context of hospital readmission and determine if there is a gap in the literature regarding patient needs for specific types of social support. There is a lack of conceptual and operational consistency in how social support is evaluated by researchers. Some researchers use validated tools to evaluate social support, for example The Social Provision Scale (Agtarap et al., 2018), The Duke Social Support Scale

(Ottenbacher et al., 2012), or The Multidimensional Scale of Perceived Social Support

(Chan et al., 2019). Others identify social support based on information found in

electronic health records (Cimarolli et al., 2020) or based on patients' responses to

questions (Rodríguez-Artalejo et al., 2006).

Methods

The purpose of this study was to conduct a scoping review of social support and

hospital readmissions to inform future research. Scoping reviews are used to identify

gaps in existing literature, thereby informing readers where more research is needed in a

specific area of study and presenting this evidence in a clear, comprehensive manner

(Arksey & O'Malley, 2005). A scoping review can serve as a starting point for future

studies that could contribute to current practice guidelines, provide education to

providers, and lead to policy change or development (Arksey & O'Malley, 2005).

Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses

(PRISMA) guidelines, our objective was to identify relevant, existing studies addressing

social support and hospital readmissions, and to summarize from this literature, major

strengths, and limitations of the studies.

Search Strategy

We used multiple search strategies to identify potentially eligible studies for the

scoping review. Electronic databases used in our review included PubMed, CINAHL,

Web of Science, and PsycInfo. Only studies published between 1997 and 2020 were

included for review. Search terms were developed to reflect core areas of social support

and readmission. Related search terms included rehospitalization, readmission, and

hospital readmission in all relevant databases. In all four databases a search was done for

each term individually and the results were then combined in an advanced search using "and" for each pair of terms. The search criteria included studies limited to adults, written in English, and published in academic journals. The search strategy is outlined in Table 2.1.

Inclusion Criteria

Studies were included in the initial review if the title, abstract, or keywords indicated that the subject of the research was related to social support or readmission. Articles were scanned for relevance and selected for full review if they reported findings showing a relationship between some form of social support and readmission. Studies were included after full article review if they addressed social support and related social support to readmission among adult patients. Articles were excluded if the research was conducted with patients who had a primary mental health diagnosis or patients who were admitted for substance abuse/use and treatment.

Study Selection

A total of 2219 titles were identified, and 853 duplicates were removed. Further screening of the titles, abstracts, and keywords of the remaining 1366 articles was done. Fifty-seven articles were retained for full-text review, and 36 articles were further excluded because they included patients less than 18 years old, did not address readmission, did not evaluate social support, evaluated patients with a primary diagnosis that was related to mental health or substance abuse/treatment, were abstracts of presentations, or the study did not evaluate the relationship between social support and readmission. Twenty-three articles were retained and are included in this scoping review. A PRISMA flow diagram outlines the literature search process (Figure 2.2).

Data extraction

Descriptive data was extracted from each article and content analysis done. Information regarding authors, year of publication, purpose, study design, analytic method, social support measurement, population, sample size, and results are included in Table 2.2.

History and Significance

Social support has been a topic of nursing researchers for many years. Contributions by nursing researchers include the importance of social support as a factor that promotes both physical and mental health and independence among the older population (Tremethick, 1997). Nurse researchers have also studied the impact social support systems have on women dealing with intimate partner violence (Guruge & Humphreys, 2009). A clinical nurse specialist in Scotland published information about factors that need to be considered when designing studies that measure and evaluate social support (Hutchison, 1999). Hutchison noted that adequate social support can lead to positive outcomes in patient care, successful recovery from illness, and thus, is an important tool when providing holistic care.

Happ et al., 1997 state that the presence of social support may not be the key to decreasing the risk of hospital readmission; the quality of the social support is what is most important. They noted that the presence of another person in the home does not equate to adequate social support. Having people available to help with personal and medical care after discharge was found to decrease the risk of readmission by Ottenbacher et al. (2012) and Schwarz and Elman (2003). Other research has conflicting results, reporting no statistical significance between social support and hospital

readmissions (Cimarolli et al., 2020; Li et al., 2019). The methods of measurement of social support are inconsistent between studies. Cimarolli et. al did not report the use of a formal tool to assess social support, Li et. al, Ottenbacher et. al, and Schwarz and Elman all used different validated assessment tools. Thus, results from different studies are difficult to compare. The evaluation of current literature to determine if there is a standard method of evaluating social support in relation to hospital discharge will lead to understanding if there is consistency and comparability between study results.

Study Design and Setting

All studies used a cohort design model (Agtarap et al., 2018; Cakir et al., 2017; Chan et al., 2019; Chin & Goldman, 1997; Cimarolli et al., 2020; Dupre et al., 2018; Enguidanos et al., 2015; Flythe et al., 2017; Green et al., 2020; Happ et al., 1997; Li et al., 2019; Navathe et al., 2018; Ottenbacher et al., 2012; Polsook & Aungsuroch, 2020; Rodríguez-Artalejo et al., 2006; Rubin et al., 2014; Schwarz, 2000; Schwarz & Elman, 2003; Sokoreli et al., 2019; Stewart et al., 1997; Strunin et al., 2007; Vinson et al., 1990; White et al., 2015). The United States was the most common country setting (19/24). Other studies were conducted in Spain (Rodríguez-Artalejo et al., 2006), China (Li et al., 2019), Thailand (Polsook & Aungsuroch, 2020), Canada (Stewart et al., 1997), and England (Sokoreli et al., 2019). The majority of the researchers used the term social support, however, authors of one study used social networks (Rodríguez-Artalejo et al., 2006), and another used social factors (Chin & Goldman, 1997). Some researchers used descriptive terms such as family support (Happ et al., 1997; Sokoreli et al., 2019) or limited protective/social factors or support (White et al., 2015), or in-home support

(Enguidanos et al., 2015) to identify social support. One research team described tasks for which the patient needed help (Rubin et al., 2014).

Demographics of study participants

There were 61,253 adult participants included in the studies used for the review, and males represented the largest percentage. (Agtarap et al., 2018; Chan et al., 2019; Dupre et al., 2018; Enguidanos et al., 2015; Flythe et al., 2017; Green et al., 2020; Li et al., 2019; Navathe et al., 2018; Polsook & Aungsuroch, 2020; Rubin et al., 2014; Sokoreli et al., 2019; White et al., 2015). Eleven of the studies only included adults 60 or older (Chan et al., 2019; Cimarolli et al., 2020; Dupre et al., 2018; Enguidanos et al., 2015; Green et al., 2020; Happ et al., 1997; Ottenbacher et al., 2012; Rodríguez-Artalejo et al., 2006; Schwarz, 2000; Schwarz & Elman, 2003; Sokoreli et al., 2019; Vinson et al., 1990; White et al., 2015). Most patients were white (66.6%), indicating that minority groups were not well represented in the studies related to social support and hospital readmission.

Discharge Process and Readmission

Although the topic of hospital readmission is often related to the discharge process, only ten of the articles addressed discharge needs, discharge planning, or discharge education (Cakir et al., 2017; Cimarolli et al., 2020; Flythe et al., 2017; Li et al., 2019; Navathe et al., 2018; Rubin et al., 2014; Strunin et al., 2007; White et al., 2015). Eleven of the studies addressed assessment or screening, but only five mentioned it as part of the discharge process (Chan et al., 2019; Flythe et al., 2017; Green et al., 2020; Li et al., 2019; Schwarz, 2000). Chan et al. stated that during discharge, patients with low social support scores should be identified so they can be connected to support

networks to avoid readmission. Li et al. also identified a low social support score as a potential risk for readmission and stated that someone with a low score would need more intensive transitional care support. Along the same lines, Flythe et. al noted that knowledge of the social support score could indicate a need for a more focused discharge plan, and Green et al. and Schwarz et. al said the assessment of social support should be part of the discharge plan. The need to include the patients and their support person(s) as part of the discharge team, and the importance of communication were noted in two studies (Cakir et al., 2017; Rubin et al., 2014). Of the two other studies that addressed the discharge process, one reported that discharge planners were unable to properly plan due to missing information regarding social support (Navathe et al., 2018), the other stated that the discharge process is a time when errors can occur that may result in hospital readmission (Strunin et al., 2007). The participants (both patients and support persons) in the qualitative study done by White et. al shared that they felt inadequately prepared for discharge, indicating that better discharge planning was needed (White et al., 2015). The overall sense of the importance of adequate assessment, screening, and discharge planning related to social support is that planning should include the patient and their support person and ensure that discharge information is appropriately tailored, meaningful, and understood. The key findings of most of the articles included in this review is that a lack of social support increases the incidence of rehospitalization and having adequate social support decreases the risk of rehospitalization.

<div align="center">**Assessment methods for social support**</div>

Researchers used various methods to evaluate social support. Several studies used validated assessment tools (Agtarap et al., 2018; Chan et al., 2019; Flythe et al., 2017;

<div align="center">28</div>

Ottenbacher et al., 2012; Schwarz & Elman, 2003). The Social Previsions Scale, used by

Agtarap et al., (2018), was thorough in assessing social support and included statements

within the tool that corresponded with different types of social support. For example, the

Social Previsions Scale includes variables related to attachment and integration

(emotional support), self-worth (esteem), reliable alliance (instrumental support),

guidance (informational), and the opportunity for nurturance (companionship). The four-

item questionnaire developed and used by Rodriguez-Artlajo et al. (2006) did not address

different kinds of social support; it only addressed whether the individual was married,

living with someone, had daily contact with friends or family, or were home alone less

than two hours a day. The questions did not assess specific types of social support or ask

if patients felt their social support needs were adequately met. Additional tools used by

researchers included The Multidimensional Scale of Perceived Social Support (Chan et

al., 2019), the Medical Outcomes Study Social Support Survey (Flythe et al., 2017), and

the Duke Social Support Scale (Ottenbacher et al., 2012). Each of these instruments

evaluated multiple aspects of social support, including information about the support

available from family, friends, and people within their community. Schwarz and Elman

(2003) used the tangible subscale rating from the Modified Inventory of Socially

Supportive Behaviors Scale, assessing instrumental support activities to evaluate social

support provided by family or friends. Although several tools were used to assess social

support, there was a lack of consistent measures used among studies, and in some cases,

no formal assessment tool was identified. This lack of consistency makes comparison of

outcomes inequitable and aggregation of data difficult.

Unmet Needs After Discharge

Qualitative and quantitative research methods revealed patient perspectives on factors they identified as having contributed to readmission. Four themes emerged from studies that were directly related to instrumental support: lack of funds, lack of medication, lack of support for basic needs, and lack of transportation (Cakir et al., 2017; Dupre et al., 2018; Happ et al., 1997; Rubin et al., 2014; Strunin et al., 2007; White et al., 2015). Findings by Cakir et al. (2017) revealed that 60% of the patients readmitted had no follow-up appointment scheduled at the time of discharge, and a primary care provider did not see 66% of the patients before readmission. These findings are in line with results reported by Dupre et al. (2019) that those who had difficulty scheduling appointments, accessing care, and lacked transportation had significantly higher readmission rates. Strunin (2007) also found that a lack of transportation along with the lack of being able to meet basic medical and personal needs played a role in increasing readmissions. This theme of lack of community support having a negative impact on the recovery processes was echoed by participants in White et. al's study (2015) where patients reported the lack of community support played a significant role in increasing the risk of readmission. Happ et al. (1997) reported that patients who were non-adherent in taking prescribed medications and patients who were unable or unwilling to follow dietary instructions had an increased risk of readmission. The variables identified as unmet needs demonstrate a specific need for instrumental support post-discharge to help patients successfully recover at home. The consensus of the findings was that there is a need for social support after discharge to decrease the risk of hospital readmission.

Discussion

Having support affects hospital readmission among adult patients with various disease processes. Studies examined both the effects of specific types of social support and the broad category of social support. Review findings indicate the importance of assessing social support routinely for all patients. Evaluating available social support as a part of an admission assessment and before hospital discharge may give healthcare clinicians (or professionals) valuable information regarding assistance the patient will have during the hospital-to-home transition (Kaplan et al., 1977; Weiss et al., 2019). Knowing the strength of patients' social support and social networks can help clinicians anticipate patient needs following hospitalization. Findings from the available research demonstrated a relationship between social support, recovery, and readmission rates.

Specific types of social support were not consistently identified or discussed in the research articles included in this scoping review. A common theme was that patients who experienced a readmission needed some type of assistance after discharge, and the lack of assistance contributed to readmission. Lack of transportation, funds, assistance with meal preparation, and understanding the discharge plan were identified by patients as contributing to their readmission. Patients reported a lack of stamina to complete tasks and the inability to follow discharge instructions. Hajduk et al. (2018) evaluated the support needed after discharge by patients following an acute coronary event admission and found that 75% of them required and received instrumental support. This finding is consistent with the data found in the articles included in this review. Many patients needed additional assistance during the extended recovery period at home to successfully transition from hospital to home. Considering the effects of hospitalization and potential

deficits related to receiving inpatient care, the identified need for support during the immediate post-discharge period is not surprising. The physical and mental effects of being hospitalized can lead to depleted stamina and strength, especially in the older adult population and, for some patients a time of impaired cognition (Seben et al., 2020).

Limitations

This scoping review has several limitations. The quality of the evidence presented was not evaluated. We performed a thorough literature search in the chosen data bases and periodic updates to look for new information published, there is still the possibility that articles that potentially met the selection criteria were missed. There may also be unpublished articles that would meet inclusion criteria as well. The included articles were limited to those written in English, there may be articles written in other languages that would meet inclusion criteria. Lastly, the focus of this review was instrumental support and readmissions only. However, this decision excluded articles that may have relevance to patient outcomes related to instrumental support.

Conclusion

The availability of social support prior to discharge to aids in the transition process and potentially decrease the risk of readmission (Agtarap et al., 2018; Flythe et al., 2017; Happ et al., 1997; Schwarz, 2000). Understanding the type of social support needed by the patient after discharge is essential. Researchers that reported findings from a study related to social support and patients with decompensated cirrhosis noted that further studies need to evaluate specific components of social support that have the potential to reduce the readmissions risk (Louissaint et al., 2020), further supporting the gap in research identified by this review. Based on this scoping review, patients are more

likely to need instrumental support as opposed to emotional support, for example. Identifying and focusing on the specific needs of the patient will enable care providers, family, and friends to develop a plan to meet specific needs. Throughout the research included in this review, the threaded theme is that patients need others to be present to provide hands-on assistance. More conceptual and operational definitions of social support would lead to advanced knowledge and help generating future research related to social support. This review suggests that there is a gap in knowledge related to a lack of research specific to the need for instrumental support provided by significant others during the extended recovery period at home after discharge.

Relevance to Clinical Practice

This scoping review provides valuable information on the effect social support has on readmission and a better understanding of the role of social support. The lack of social support, specifically instrumental support, could be a barrier to discharging a patient home or potentially a risk factor for readmission. Healthcare providers who assess social support can better identify those who may need additional support or intervention to successfully continue the recovery process at home. Further research should target specific types of social support that may decrease the risk of readmission. The frequency, thoroughness, and consistency of assessing social support availability and adequacy should be considered as a routine part of the discharge planning assessment process. Inclusion of significant others in discharge planning may be necessary to increase post-discharge adherence and decrease hospital readmission. From the patient perspective, ensuring readiness for hospital discharge leads to feelings of safety, security, and support as they continue to recover at home (Galvin et al., 2017). Additional research should

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include assessing the adequacy of social support patients receive after discharge to provide valuable knowledge about needed and received support. Patients' perception and actual evaluation of the level of support received would contribute to the extant knowledge and inform future care transition research.
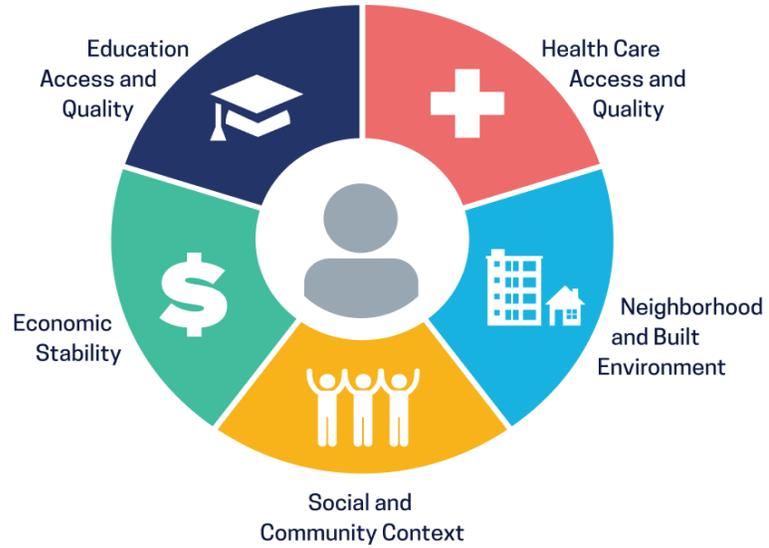
Figure 2.1 Healthy People 2030 Social Determinants of Health
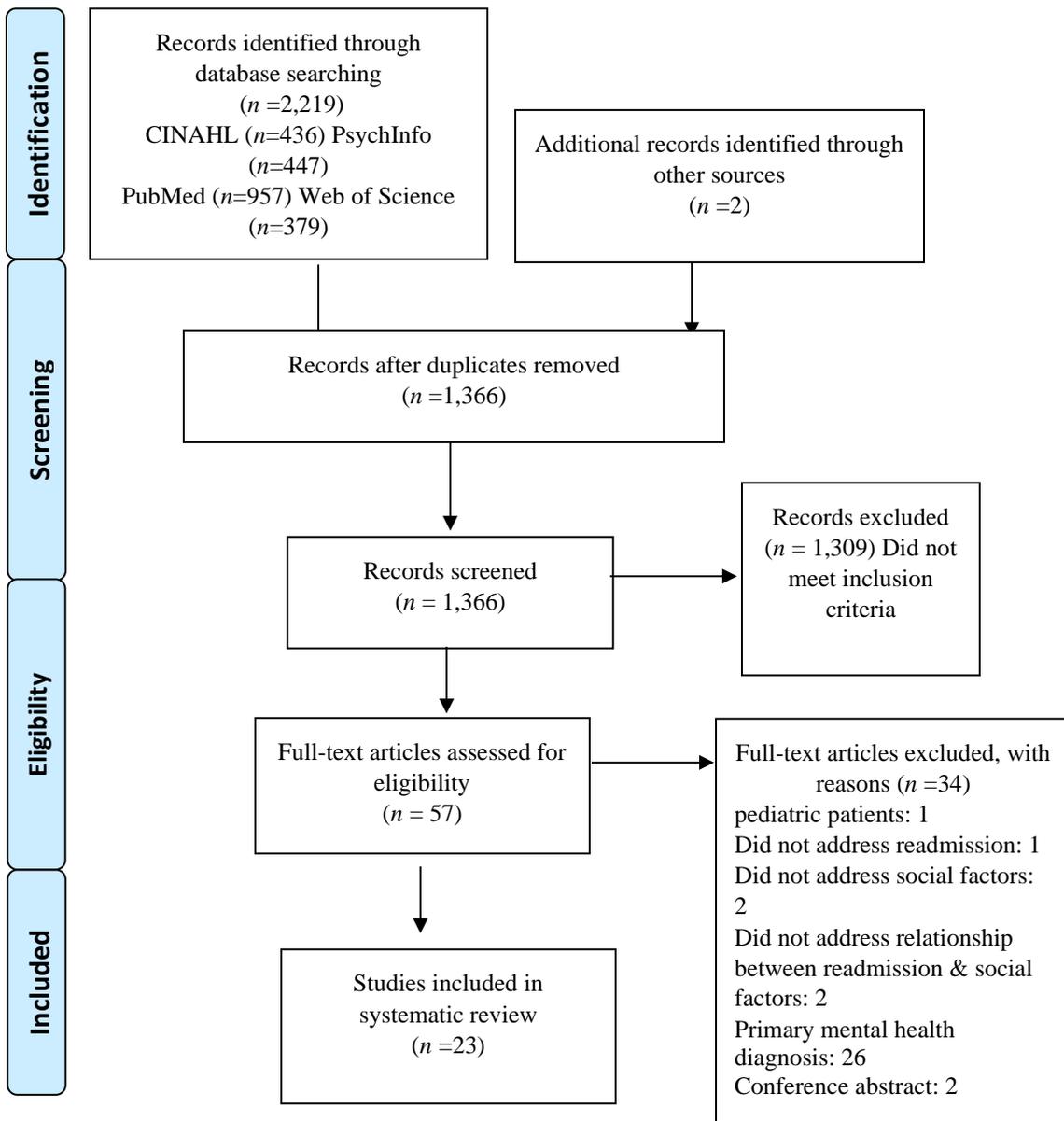
Figure 2.2 PRISMA flow diagram

Table 2.1 Search Strategy

Database	Key terms					Combined Terms			
	"SS"	R	"PR"	"HR"	RH	"SS" and R	"SS" and "PR"	"SS" and "HR"	"SS" and RH
CINAHL	47,846	4,761	7,710	1,484	1,601	209	71	68	88
Web of Science	75,422	27,372	759	5,706	6,446	201	8	76	102
PsycINFO	82,938	4,767	2,134	1,486	1,366	200	107	68	72
PubMed	92,836	38,455	18,817	4,564	7,262	447	286	80	144

Note. Key: SS=social support, R=readmission, PR= patient readmission, HR:=hospital readmission, RH= rehospitalization

Table 2.2 Table of Evidence

Article	Purpose	Method/ Design	Method of Analysis	Sample	Key Findings/Results	Method of Assessing Social Support
Agtarap et al. (2018)	to test the utility of social support & depression in predicting readmissions up to one year after initial injury	cohort study	logistic regression	n=180	32 readmits, 50 outpatient encounters, adequate social support correlated with less likely to be readmitted	Social Previsions Scale
Cakir et al. (2017).	identify the factors that contribute to hospital readmission as seen from the patient's perspectives in a large urban community hospital	cohort study	qualitative data analysis	n=80 patients, n=122 readmit	lack of social support was noted in a large number of the readmitted patients transportation, food, money, ability to schedule follow-up appointments.	responses to open-ended questions
Chan et al.(2019	examine the association of perceived social support in 30-day readmission or death in older	observation al cohort study	logistic regression	n=674	high social support was protective against readmissions or death, race dependent	Multidimensional Scale of Perceived Social Support

	adults admitted to a safety-net hospital					
Chin et al.	identify characteristics associated with a high risk for readmission or death within 60 days of discharge	prospective cohort study	Fishers exact test, chi square	n=257	both medical & social factors correlate to clinical decline	determined by noting patient needs
Cimarolli et al. (2020)	investigate the relationship of individual characteristics and health behavior with the occurrence of being rehospitalized as opposed to being discharged home in different older adult ethnic groups	retrospective cohort study	1-way ANOVAs, chi square	n=520	for African-Americans & whites, having no social support, higher levels of admission functional dependency, & shorter length of stay associated with increased readmission	determined by examining clinical notes

Dupre et al. (2018)	to investigate the correlations and consequences of inadequate access to routine care in cardiovascular patients admitted to a large medical center	retrospective cohort study	logistic regression	n=520	patients who were younger, male, uninsured, with heart failure, had low social support were more likely to report difficulty accessing routine care and has substantial risks for readmission	n/a
Enguidanos et al. (2015).	to determine the perspectives of seriously ill individuals on reasons for 30-day hospital readmission	prospective qualitative study	qualitative data analysis	n=12	lack of in-home support (lack of self-care or someone to assist with care) directly contributed to readmission	n/a determined by analysis of qualitative data
Flythe et al. (2017	to investigate the associations between hospital-assessed depression, health literacy, social support, & self-related health (separately) & 30-day hospital	cohort study	logistic regression	n=154	patients with positive screening for depression, lower health literacy & poorer social support were more likely to have a 30-day readmission	Medical Outcomes Study Social Support Survey

					readmission among dialysis patients	
Green et al. (2020).	determine the associations between 5 distance domains of social support- emotional, informational, tangible, positive social interaction, affectionate- within a 6-month readmission & mortality in older patients hospitalized for AMI	retrospective cohort study	logistic regression	n=3006	low social support was associated with readmission and mortality, specifically low informational support (someone to turn to for suggestions about how to deal with a personal problem) i.e. lack of advice related to obtaining medications or transportation to appointments	Medical Outcomes Study Social Support Survey
Happ et al. (1997).	describe factors contributing to rehospitalizations of elderly patients with heart failure	cohort study, qualitative data analysis	qualitative data analysis	n=16	having supportive family & friends decreases the risk of readmission	n/a, information gathered from NP visit log

Li et al. (2019).	to characterize readmission after acute MI in low and middle income countries like China	retrospective analysis	logistic regression, chi square, Cox proportional hazards model	n=3389	lower social support was not associated with readmission	enriched social support instrument
Navathe et al.. (2018	to evaluate the prevalence of several factors using physician notes as compared to claims & structured EHR's data & the resulting association with 30-day readmissions	observational cohort study	logistic regression	n= 49,319	higher readmission rate associated with poor social support	"medical text extraction, reasoning and mapping system"
Ottenbacher et al. (2012	to examine factors associated with hospital readmission in persons with stroke following post-acute	prospective cohort study	linear regression	n=674	functional status, social support, depressive symptoms were important predictors of hospital readmission	Duke Social Support Scale

	inpatient rehabilitation					
Polsook et al (2020)	to determine the impact of social support, depression, comorbidities, symptom severity, quality of life, and readmission among CAD patients in Thailand	cross-sectional analysis	linear regression	n=321	lower levels of social support was found to be the most significant predictor for readmission	Multidimensional Scale of Perceived Social Support
Rodríguez-Artalejet al. (2006)	to examine the relationship between social network and hospital readmission and mortality in older patients with heart failure	prospective cohort study	Cox model	n= 371 patients	patients with low social networks have a higher incidence of readmission	responses to questions developed by the researchers
Rubinet al. (2014)	to explore cause of early readmission within 30 days of discharge among	qualitative cohort study	qualitative data analysis	n= 20	patient reports of lacking help needed after discharge with nursing care, medications and meals	n/a, social support not specifically named, patient report of unmet needs

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	patients with diabetes					
Schwarz (2000)	determines whether low social support, low satisfaction with social support, high depressive symptomology of the caregiver & minimal use of home health care predicted hospital readmission of the older adult	Mixed methods cohort study	qualitative data analysis multiple regression	n= 60	tangible forms of social support & helping others were negatively related to the number of hospital readmissions	Modified Version of the Inventory of Socially Supportive Behaviors Scale
Schwarz & Elman (2003	Evaluate whether severity of cardiac illness, cognitive functioning and functional health of older adults with heart failure and psychosocial factors related to caregiving are	cohort study	Cox proportional hazard models	n= 156 patient-caregiver dyads	High levels of informal social support reduced the risk of hospital readmission.	Modified Version: Inventory of Socially Supportive Behaviors Scale

	predictive of hospital readmissions of those with HF					
Sokoreli et al (2019)	assess the ability of measures of frailty and social support in addition to demographic, clinical, imaging & lab variables to predict short-term outcome of patients discharged after a hospitalization for HF.	cohort study	logistical regression	n=1094	adding marital status, support from family & measures of physical frailty increased the area under the receiver-operating characteristic curve	"good social support"= married, not living alone or patient perception
Stewart et al.(1997)	identify psychological and social factors associated with early readmission to hospital of patients with IHD	cohort study	Cox model, Fishers exact test	n=100	greater use of coping strategy "seeking social support" was associated with readmission	Norbeck Social Support Questionnaire

Strunin et al. (2007)	to understand the phenomenon of frequent rehospitalization from the perspective of discharged patients and to determine if activities at time of discharge could be designed to reduce the number of adverse events and rehospitalizations	cohort study	qualitative data analysis	n=21	Rehospitalization related to lack of social and emotional support	analysis of information reported by patient
Vinsonet al. (1990)	Identify variables and remediable factors that increase patients risk of readmission	prospective cohort study	t-test, Fishers	n= 140	factors contributing to potentially preventable readmissions included failed social support system	through interview of patient and family

| White et al. (2015) | to describe the experience of readmission from the perspective of the stroke survivor & family caregiver | cohort study, descriptive qualitative | Qualitative data analysis | n=29 interviews | patients readmitted reported limited support for self-care in the community | identified by patients and caregivers |

CHAPTER 3

THE IMPACT OF NURSES' AND PATIENTS' PERCEPTIONS OF

INSTRUMENTAL SUPPORT AND HOSPITAL UTILIZATION DURING

THE FIRST 60 DAYS AFTER HOSPITAL DISCHARGE

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Abstract

Purpose: Hospital readmission rates are a quality measure and directly affect hospital reimbursement. Readmission is not the only hospital care provided after discharge; patients are also seen in the emergency department and may experience an observation stay. One factor that has been shown to increase the risk of readmission is a lack of instrumental support after discharge. This study assessed whether specific items on the Readiness for Hospital Discharge Scale (RHDS) that evaluated patients expected post-discharge level of instrumental support predicted post-discharge acute care utilization (emergency department visit, observation stay, or readmission) within 0-30 and 31-60 days after discharge.

Design: Retrospective cohort study.

Methods: Data from 13361 individuals with an index admission to one of three hospitals within a large regional hospital system was used. Responses of two groups, those with a subsequent acute care use within 0-30 and 31-60 days of discharge and those without acute care use, were compared using logistic regression.

Findings: The sample included 13361 patients who had a mean age of 58.4 [SD=20.51] years and 51% female. Of the study sample, 14.9% (*n*=1997) required either an ED visit, OBS stay, readmission, or any acute care utilization within 0-30 and 31-60 days of discharge and 42.1% (*n*=5628) required acute care within 31-60 days of discharge. Higher mean RN scores of the two items on the RHDS, evaluating expected instrumental support after discharge were associated with decreased likelihood of a patient utilization of hospital service(s) and ED visits within 0-30 and 31-60 days, observation stays within 31-60 days, and receiving any service when evaluating the combined acute care service

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variable within 31-60 days. Patients who were Hispanic were less likely to experience an acute care service or ED visit within 0-30 days of discharge, and any type of acute care service within 31-60 days of discharge. Patients who were White were less likely to experience an ED visit or acute care service within 0-30 and 31-60 days of discharge and having and OBS stay within 31-60 days of discharge. Patients who were younger were less likely to experience an OBS stay and readmission within 30 days, and an OBS stay and an acute care service within 31-60 days Patients who were male were less likely to have an ED visit within either 0-30 or 31-60 days compared to females. They were also less likely to have any service within 31-60 days. Patients who were not married were less likely to experience an ED visit or OBS stay within 31-60 days as compared those who were married.

Conclusions: Nurses input regarding the availability of help at home after discharge with personal and medical needs is vital in planning and providing care to decrease the risk of hospital utilization after discharge.

Clinical relevance: Instrumental support, help at home with personal and medical care, is an important consideration when planning for discharge and successful continued recovery at home.

Key words: instrumental support, patient readmission, discharge readiness assessment

Higher-than-average patient readmission rates within 30 days of discharge are associated with negative patient outcomes and financial penalties for healthcare systems (Bailey, 2019; Pack et al., 2016). Up to 50% of hospital readmissions may be preventable (Fluitman et al., 2016). Several studies have focused on assessing the causes and risk factors associated with hospital readmissions. (Berry et al., 2018; Davis et al., 2017; Goldgrab et al., 2019; Sokoreli et al., 2019). Factors known to increase the risk for hospital readmission include specific diagnoses, socioeconomic status, age, gender, ethnicity, prior admissions, functional disability, and living conditions (Kahlon et al., 2015). Providing interventions in hospitals to patients at risk factor for readmission is one way to improve quality and potentially reduce financial penalties. Addressing patients' post-hospital needs during the discharge planning process has been recommended by researchers studying readmission and transitional care (Chan et al., 2019; Scott et al., 2017; Strunin et al., 2007) and research indicates that discharge readiness is a strong predictor of readmission risk (Bobay et al., 2018; Weiss et al., 2017; Weiss et al., 2011). Discharge readiness assessment tools from both patients' and nurses' perspectives can be indicators of the patient's level of discharge readiness (Weiss et al., 2019).

Research exploring patient and healthcare factors that impact healthcare utilization after discharge most often include readmissions, but a limited amount of research also includes emergency department (ED) visits, and observation (OBS) stays (Rising et al., 2013; Weiss et al., 2019). ED visits, OBS stays, and hospital readmissions may indicate the necessity for support to meet basic medical needs such as dressing changes and help with medication, and assistance with activities of daily living (Cakir et al., 2017; Enguidanos et al., 2015; Flythe et al., 2017; Ha et al., 2019; Strunin et al.,

2007). The need for assistance may result from effects related to hospitalization, a condition known as post-hospital syndrome, a transient period of generalized risk for adverse outcomes after a hospital admission, which is especially common in older adults (Caraballo et al., 2019). Determining effective methods to assess and identify patients' needs after discharge help acute care facilities and providers address patients' needs prior to hospital discharge. The need for social support, specifically instrumental support after discharge, has been identified as a post-hospital necessity for many patients in several studies (Agtarap et al., 2018; Cakir et al., 2017; Enguidanos et al., 2015; Flythe et al., 2017; Jung-Hwa et al., 2019; O'Conor et al., 2019; Rodríguez-Artalejo et al., 2006; Strunin et al., 2007). Based on previous research findings reporting the impact of instrumental support on patients' successful recovery after hospital discharge, further research to explore effective ways to consistently measure patients' availability of instrumental support is necessary.

Methods

Design & Ethical Considerations

A retrospective secondary analysis of a subset of patient data from the University of South Carolina and Prisma Health Readmission Evaluation and Discharge Interventions Study (READI-2). The parent study for this secondary data analysis was approved by the institutional review boards at both the affiliated university and the health system. The subset of data used for this secondary analysis included data from October 2018 to September 2019. using deidentified data provided to the investigators.

Conceptual Frameworks

The conceptual basis for this study is the social ecological model developed by Bronfenbrenner to discuss the impact of environment on the development of a child (Bronfenbrenner, 1977). This model has been adapted for use as the conceptual basis for this research study. The adapted model (model 1) includes the impact of the individual, relationships, healthcare, and community on the concept of a successful transition from the acute care setting to home. Noting how each system impacts the process of the individual.

The Conceptual Model of Relationship Between the Care Transitions Outcomes Desired by the Patients and Caregivers and the Care Transitions Services and Provider Behaviors Across the Care Continuum was also used to guide this research (Mitchell et al., 2018). This model highlights the importance of the process of transition, noting that patients desire to feel cared for and if they do, they are more likely to follow the discharge plan of care. The inclusion of caregivers, effective communication, empathy, and clear discharge instructions are important. Patients and caregivers desire uninterrupted care and collaboration regarding post-discharge care. This can be tied into the perceptions of patients regarding informal care they will receive after discharge in their home environment.

Setting and Sample

The parent longitudinal study data is being collected from three acute care hospitals in South Carolina, all located within the same metropolitan area. One hospital has 641 patient beds, another 352 patient beds, and the third has 76 patient beds. The parent study included 58757 patient records. A total of 13361 patient records were

included in this study. Inclusion criteria for this secondary analysis were adult patients 18

and older who did not have an admission in the 90 days prior to October 1,2018 and had

completed RN-RHDS and PT-RHDS assessments as part of their electronic health record.

The majority of the patients were 55 years of age and older (60.6%), White (63.2%), and

non-Hispanic (75.6%). Patients were about equally divided between male (49%) and

female and married (48.2%) and not married (Table 3.1).

Outcome Variables

All-cause hospital readmissions, ED visits, and OBS stays reported within 0-30

and 31-60 days of discharge were the outcome variables. Bivariate variables were created

for ED visit, OBS stay, and hospital readmission for any reason within the first 30 days

and 31-60 days after discharge to reflect whether the patient did or did not require each

type of acute care after discharge. Readmissions were not linked based on diagnosis code

but linked to the readmission based on the patient identification. Additionally, all three

types of acute care were combined to create two bivariate variables to indicate whether

any acute care was received during the 0-30 day and 31–60-day periods following the

index hospitalization.

Instrument

The Readiness for Hospital Discharge Survey (RHDS), both patient and nurse

versions were used in this study. There are eight items on the nurse (RN-RHDS) and

patient (PT-RHDS) versions of the survey, and both were completed within four hours

prior to each patient's discharge. The nurse completed the RN-RHDS and either the

patient or significant other, if the patient was unable to respond, completed the PT-

RHDS. The categories of the items included are personal status, knowledge, perceived

coping ability, and expected support (Weiss et al., 2014). Each item of the RHDS is scored from zero to ten, zero indicating no assistance will be available after discharge or the patient does not feel ready for discharge and ten indicating adequate assistance will be available or the patient feels ready for discharge. Item ratings for each scale are summed-up and then divided by the number of items, and were categorized as follows, low readiness for discharge (<7), moderate (7-7.9), high (8-8.9), and very high (9-10) (Weiss et al., 2014). Reliability estimates for the RN-RHDS (nurse) were .83 and .82 for the PT-RHDS (patient) (Weiss et al., 2014). This secondary study used the mean scores from two questions of the PT-RHDS and the RN-RHDS assessments that pertain to the degree of help the patient would have, if needed with personal care (question 7) and medical care (question 8) after hospital discharge. The relationships between the mean scores from these two questions and acute care utilization within 30 and 31-60 days of discharge after an index admission were examined in the current study.

Statistical Methods

Descriptive statistics (Table 3.1) were used to summarize patient characteristics (Hispanic, White, older, male, married, and RN-RHDS and PT-RHDS means scores on the expected support items). Patient characteristics were used as co-variates to identify factors that were significantly different between patients who did and did not receive care in the hospital setting after discharge. Independent samples T-test analyses were completed to evaluate if there were differences in the mean scores of the RN-RHDS and PT-RHDS expected support items between those who did and did not receive acute care (ED visit, OBS stay, hospital readmission, or the acute care combined variable) within 0-30 and 31-60 days of discharge. To evaluate if the selected RHDS questions predicted

the probability of acute care after the index hospital discharge, separate binomial logistical regression analyses were conducted on each dependent variable (ED visit, OBS stay, hospital readmission and the acute care combined variable) using the mean score of the RN-RHDS and PT-RHDS responses to the two expected support items and any applicable covariates. Statistical analyses were performed using SPSS version 26.0 software (IBM, Corp., Armonk, NY, USA).

<h1 align="center">Results</h1>

During the first 30 days after discharge there were 959 ED visits, 260 OBS stays, 983 readmissions, and a total of 1997 people received an acute care service (ED visit, OBS stay, or readmission). During days 31-60 there were 594 ED visits, 142 OBS stays, 623 readmissions, and a total of 1250 people who received an acute care service (ED visit, OBS stay, or readmission). A mean score of the combined RN-RHDS expected support items less than 7 indicates a higher risk for needing care at home after discharge. A score greater than 7 indicates the patient is less likely to need care after discharge.

T-Test Results

T-tests were used to evaluate whether there was a the relationship RN-RHDS and PT-RHDS expected support scores for people who did or did not receive care within 0-30 or 31-60 days of discharge and ED visits (Table 3.2), OBS stays (Table 3.3), readmissions (Table 3.4), and the combined acute (Table 3.5). There was no significant difference in the mean RN-RHDS or PT-RHDS scores for 0-30 or 31-60-days for hospital readmissions, or 0-30-days for OBS stays. There was also no significant difference in PT-RHDS mean scores for the combined variable at 0-30-days.

There was a significant difference in the mean RN-RHDS and PT-RHDS scores for ED visits for 0-30 and 31-60-days. For RN-RHDS mean score, equal variances were not assumed at either 0-30 or 31-60-days ($F = 37.56$ and 43.19, respectively, $p = <.001$ for both). There was a significant difference in mean scores at 0-30-days ($t=5.13$, (df) $=1087.86$, $p = <.001$) and 31-60 days ($t=5.82$, (df) $= 1707.94$, $p=<.001$). Those who had an ED visit had lower mean score (0-30-day $M= 7.31$, $Std\ D = 3.27$; 31-60-day $M= 7.36$, $Std\ D = 3.24$) than those who did not (0-30-day $M= 7.87$, $SD = 3.02$; 31-60-day $M= 7.89$, $SD = 3.01$). For the PT-RHDS mean expected support scores, equal variances were not assumed for either period ($F = 8.90$, $p = 0.003$ and $F = 7.93$, $p = <.001$, respectively). There was a significant difference in scores at 0-30-days ($t=-2.72$, (df) $= 1197.11$, $p = 0.007$) and at 31-60-days ($t=2.84$, (df) $= 1733.73$, $p=0.005$). Those who had an ED visit had lower scores (0-30-day $M= 7.84$, $Std\ D = 3.14$; 31-60-day $M=7.89$, $Std\ D = 3.10$) than those who did not (0-30-day $M= 8.13$, $SD = 3.00$; 31–60-day $M= 8.14$, $SD = 3.00$).

There was a significant difference in mean RN-RHDS and PT-RHDS scores for OBS stays for the 31–60-day timeframe. For RN-RHDS mean expected support scores, equal variances were not assumed ($F= 1.67$, $p<.001$), there was a significant difference ($t= 22.87$, (df) $= 5423.90$, $p<.001$) for those who did and did not have an OBS stay. Those who had an OBS stay within 31-60-days had a lower mean score ($M=6.76$, $Std\ D = 3.68$) than those who did not ($M = 8.26$, $Std\ D = 2.63$). For mean PT-RHDS mean expected support scores, equal variances were not assumed ($F = 135.94$, $p<.001$) and there was a significant difference in scores between those who did and did not have an OBS stay within 31-60 days ($t= 8.64$ (df) $= 6427.33$, $p<.001$). Those who had an OBS stay within

31-60-days had lower scores (M = 7.74, *Std D* = 3.22) than those who did not (M = 8.26, *Std D* = 3.21).

There was a significant difference in mean RN-RHDS for the combined variable for the 0-30 and 31-60-day timeframes, and for the PT-RHDS variable for the 31-60-day timeframe. For RN-RHDS mean scores equal variances were not assumed at either 0-30 or 31-60-days (F = 4.901, p = 0.027, F = 9991.39, p = <.001, respectively). There was a significant difference in mean scores at 0-30-days (t=3.09, (df) = 2272.20, p = 0.002) and 31-60-days (t=19.16, (df) = 10128.28, p=<.001). Those who had an acute care service had lower scores at 0-30-days (M= 7.63, *Std D* = 3.07) and 31-60-days scores (M= 7.22, *Std D* = 3.43) than those who did not (M= 7.86, *SD* = 3.04) and (M= 8.27, *SD* = 2.63), respectively. For PT-RHDS mean expected support scores for 31-60-days equal variances were not assumed (F = 62.41, p = <.001). There was a significant difference in 31-60-day scores (t=6.57, (df) = 11679.57, p = <.001). Those who experienced an acute care service within 31-60 days had lower scores (M= 7.91, *Std D* = 3.11) than those who did not (M= 8.26, *SD* = 2.93).

Overall, nurses' mean scores were lower than patients' mean scores for four categories of care received after discharge, indicating they are less confident than patients that appropriate levels of instrumental support will be available to the patient after discharge.

Logistic Regression Results

Emergency Department Visits

The logistic regression models for ED visits (Table 3.6) were statistically significant for both 0-30-days $X^2(9)$ =126.00, p=0.000 and 31-60-days $X^2(9)$ =162.44,

$p=<.001$. The 30-day model explained 2.3% (Nagalkerke R²) of the variance in services and classified 92.8% of cases, the 31-60-day model 2.5% of (Nagalkerke R²) of the variance in services and classified 89.5% of cases. For both models, a higher mean RN-RHDS expected support score decreased the odds of having an ED visit by 2.8% (0-30-day), and 3.1% (31-60-day. The PT-RHDS mean expected support score was not significant for increasing or decreasing the odds of ED visits within 0-30 or 31-60-days.

Observation Stays

The logistic regression model for OBS stays (Table 3.7) was statistically significant for both 0-30-days $X^2(9) = 28.15$, p=0.00 and 31- 60-days $X^2(9) = 1677.65$, p=<.001. The 0-30-day model explained 1.2% of (Nagalkerke R²) of the variance in services and classified 98.1% of cases, the 31-60-day model explained 16.9% of (Nagalkerke R²) of the variance in services and classified 76.4% of cases. RH-RHDS and PT-RHDS expected support scores were not significant in increasing or decreasing the odds of experiencing an observation stay within 0-30-days of discharge. For OBS stays within 31-60-days, a higher RN score decreased the odds by 12.5%, a higher patient score increased the odds by 4.1 of having an OBS stay.

Readmissions

The logistic regression model for readmissions (Table 3.8) was statistically significant for both 0-30-days ($X^2(9) = 27.01$, $p=<.001$) and 31-60-days ($X^2(9) = 53.42$, $p<.001$). The 0-30-day model explained 0.5% of (Nagalkerke R²) of the variance in services and classified 92.6% of cases the 31-60-day model explained 0.8% of (Nagalkerke R²) of the variance in services and classified 89.0% of cases. RN-RHDS and

PT-RHDS mean expected support scores not significant for increasing or decreasing the odds of being readmitted within 0-30-days or 31-60 days of discharge.

Combined Acute Care Service Variable

The logistic regression models for the combined variable (Table 3.9) was statistically significant for both 0-30 and 31-60-days, $X^2(9) = 66.03$, $p=<.001$ and $X^2(9) = 1172.68$, $p=<.001$, respectively. The 0-30-day model explained 0.9% (Nagelkerke R^2) of the variance in services and classified 85.1% of cases, the 31-60-day model explained 11.3% of (Nagelkerke R^2) of the variance in services and classified 64.8% of cases. In the 30-day RN-RHDS and PT-RHDS were not significant in increasing or decreasing the odds of receiving a service. In the 31-60-day higher mean RN-RHDS decreased the odds by 9.6% and having a higher mean PT-RHDS score decreased the odds by 3.5% of receiving care, based on the combined variable.

Logistic Regression Results Summary

Table 3.10 provides a summary of logistic regression results showing whether the variable was found to increase, decrease, or have no impact on the odds of the patient having an ED visit, OBS stay, or receive any type of acute care based on the combined variable within the 0-30 and 31-60-day timeframes.

Limitations

These research findings have several limitations. This study relied solely on the use of retrospective data from a data set including patients from one hospital system in one state in the southeastern region of the United States. The data did not include information regarding care at another facility outside of the hospital system after discharge, thus acute care received after hospital discharge may have been under-represented. The data

provided information regarding care received up only 60-days, patients could have had subsequent care within the acute care setting following that time. Potentially important information such as RHDS scores for subsequent admissions were not available to determine if nurse or patient perceptions of available support changed over time or when the patient experienced a change in health status. There was inconsistency in the coding of the original data, some coders noted the number of times a patient experienced an ED visit, OBS stay, or readmission and others coded the data based on the day of service from admission, for example a patient with one readmission might have a 1 (one service) or they may have 28 (indicating that the service occurred on day 28). Because of this discrepancy the data we transformed to a bivariate variable to indicate that the patient had or had not received any type of acute care service after discharge. Most patients were White, so the results may not be generalizable to a more diverse population.

Discussion

The purpose of this study was to evaluate the association between nurse and patient perceptions of expected instrumental support after discharge from an index hospitalization and the incidence of receiving unplanned care in the acute care setting after discharge, as well as the congruence between the nurse and patient responses on the RHDS. Results of logistic regression revealed that overall, lower nurse perceptions of anticipated support (RN-RHDS) increased the likelihood of the patient receiving unplanned care in the acute care setting after discharge. Patient RHDS scores were not good predictors of the likelihood that a patient would receive care in the acute care setting after discharge.

Our results indicate that nurses were less confident than patients regarding whether the patient would have the support they needed at home after discharge. Nurses' ratings on the RHDS related to instrumental support at home to help with personal and medical needs following hospital discharge were consistently lower than patient scores for the group that required unplanned care in the acute care setting after discharge. Nurses' perceptions of potential caregivers who may be available to provide help after discharge may be more accurate than the patient perceptions. Nurses often observe interactions between patients and potential care providers and may have a sense of whether that person will be able to meet the needs of the patient after discharge. Previous research has shown that having someone in the home does not equate to adequate help with personal and medical care after discharge (Happ et al., 1997). Happ et al. analyzed discharge follow-up assessments done by advanced practice nurses and found that patients who were living with someone did not always have the support they needed to help with personal care. This supports the theory that nurses have a sense of the capability of potential care gives to meet patient needs.

Although the study findings were statistically significance, the contribution of nurses' and patients' perceptions of available help after hospital discharge to subsequent care use were low. Nevertheless, there is research to support the clinical significance of instrumental support and care transitions services. Patients desire to have transitional care that incorporates caregivers and involves care providers that are compassionate, empathetic, are collaborative in discharge planning and consider the needs of the caregiver as well as the patient during the transition period (Mitchell et al., 2018). Patients and caregivers desire discharge plans that are concrete, include provisions for

uninterrupted care and provide accountability on the part of the providers involved (Mitchell et al., 2018). A challenge of the current healthcare system is the transition away from family physicians who once admitted and cared for their own patients in the hospital to hospitalists who have no personal connection to patients prior to or after hospitalization. Hospitalists have no foreknowledge or insight into the family dynamics that a personal physician may have. This lack of personal connection between the prior and the patient may contribute to the challenges related to care transition relationships such as seeking care in the acute care setting after discharge.

Another clinically important finding from this study is the impact of monitoring not only hospital readmissions, but also ED visits and OBS stays. Recent research findings involving more than 3 million hospital stays from 2012-2015 noted an increase in treatment received in emergency departments and observation units and only a modest decrease in readmissions in the 30 days following discharge (Wadhera et al., 2019). The researchers surmised that providers as, attempt to keep readmission rates down, patients are treated in the ED and OBS units. Thus the result of decreased readmissions was not a result of a change in discharge practices, but rather a shift in the type of post-discharge care received. Our research showed the capturing ED visits and OBS stays can provide important data for monitoring patient outcomes.

Future Research

The RHDS was developed in response to clinical nurses' identified need for a formal method to assess discharge readiness (Bobay et al., 2018). In the past, the process of assessing discharge readiness lacked a validated, evidence-based practice instrument, that would provide nurses with a consistent method to substantiate how prepared the

patient and caregiver were to continue the recovery process the in post-discharge setting (Bobay et al., 2018). Findings from this study showed that nurses' perceptions related to the availability of help at home after discharge were statistically significant in predicting readiness and the risk of returning to an acute care facility for additional care. Patient scores were not predictive in our study of increased likelihood of receiving a service, which is in line with the results from previous studies as well. However, more research still needs to be done to understand the support patients may receive at home following hospital discharge. There is a need to conduct research that evaluates whether the post-discharge support patients' and nurses perceive to be available is actually available following discharge. A hospitalization is often a critical event where spouses, family, and friends attend closely to a patient, but such attention may not be sustained in many cases in the days and weeks following hospital discharge. Based on the study results and other relevant literature, a mixed methods study would be an appropriate next step for research evaluating instrumental support and acute care utilization after discharge from an index hospitalization. This would enable researchers to evaluate the appropriateness and quality of instrumental support received during the recovery period at home.

Final Conclusions

The time of transition from hospital to home can be difficult for patients who are recovering from a hospitalization, especially the older population. Evaluating patient needs and assessing for the availability of adequate support after discharge may be important to understand patient outcomes and further reduce the risk of needing care in the hospital setting after a hospital readmission. Capturing additional points of care by evaluating ED visits and OBS stays can provide information to further study patient

outcomes and address patient safety. Although there is a great deal of research focused on the 0-30-day timeframe, there is a need to evaluate patient needs and risks beyond 30-days.

Identifying a tool that can provide consistent results regarding the availability of instrumental support may be a needed step to reduce care sought in the acute care setting after discharge. Our study showed that there may be a relationship between RN-RHDS assessment of patients' potential availability of help at home with personal and medical care after discharge and the likelihood that a patient will seek care in the acute care setting after discharge. The RN-RHDS may be a viable option, but further research is needed for confirmation. Surprisingly, patients' ratings of expected support to meet their needs after discharge and their readiness for discharge in general are not related to post-discharge acute care utilization. Results from our study, as well as prior research, indicates that having information from the RN-RHDS adds an important element to the discharge planning process to promote patient-centered care. The next step may be a study that includes both an inpatient assessment and the evaluation of the quality and effectiveness of instrumental support received within the home setting after discharge.

Table 3.1 Descriptive Statistics (*n*=13361)

	Value (%)
Age, mean (total sample)	58.4 years
18-24	439 (3.3%)
25-34	1124 (8.4%)
35-44	1301 (9.7%)
45-54	2394 (17.9%)
55-64	2952 (22.1)
65-74	2649 (19.8)
75-84	1727 (12.9)
85 and older	775 (5.8)
Gender	
Male	6545 (49%)
Female	6816 (51%)
Race	
White	8447 (63.2%)
American Indian/Alaska Native	111 (.8%)
Asian	273 (2.0%)
African American/black	1779 (13.3%)
Hawaiian/other pacific islander	25 (.2%)
all others	2726 (20.4%)
Ethnicity	
Hispanic	3073 (24.4%)
Non-Hispanic	10228 (75.6%)
Marital Status	
Married	6449 (48.3%)
not married	5680 (42.5%)
Unknown	1232 (9.2%)

Table 3.2 T-test of Emergency Department Visits

	Admit	M	SD	T	Df	Sig
30-day						
RN mean expected support scores	No	7.87	3.02	5.13	1087.86	<.001
	Yes	7.31	3.27			
PT mean expected support scores	No	8.13	3.00	2.72	1097.11	.007
	Yes	7.84	3.14			
60-day						
RN mean expected support scores	No	7.88	3.01	5.82	1707.49	<.001
	Yes	7.36	3.24			
PT mean expected support scores	No	8.14	3.00	2.84	1733.73	.005
	Yes	7.89	3.10			

Note: 30-day ED visits: RN-RHDS & PT-RHDS (n) no- 12378, yes- 983; 60-day ED visits: RN-RNDS & PT-RHDS (n) no- 11952, yes- 1409

Table 3.3: T-test of Observation Stays

	Admit	M	SD	T	Df	*p*
30-day						
RN expected support scores	No	7.83	3.05	-1.37	273.11	.173
	Yes	8.05	2.62			
PT expected support scores	No	8.11	3.01	.24	13359	.814
	Yes	8.07	3.04			
60-day						
RN expected support scores	No	8.26	2.63	22.87	5423.90	<.001
	Yes	6.76	3.68			
PT expected support scores	No	8.26	2.91	8.64	6427.33	<.001
	Yes	7.74	3.22			

RN-RHDS, PT-RHDS responses: 30-day (n) no-13101 yes-260; 60-day (n) no-9553, yes-3808

Table 3.4 T-test of Readmissions

	Admit	M	SD	T	Df	Sig
30-day						
RN expected support scores	No	7.83	3.05	.40	1164.68	.693
	Yes	7.86	2.88			
PT expected support scores	No	8.10	3.02	-1.24	13359	.214
	Yes	8.23	2.82			
60-day						
RN expected support scores	No	7.83	3.06	-.47	1888.52	.962
	Yes	7.83	2.92			
PT expected support scores	No	8.11	3.02	.72	13359	.734
	Yes	8.18	2.93			

Note: RN-RHDS & PT-RHDS responses: 30-day (n) no- 12378 (983), (y) yes 60-day (n) no-11891, (y) yes-1470

Table 3.5 T-test of Combined Care

	Admit	M	SD	T	Df	Sig
30-day						
RN expected support scores	No	7.86	3.04	3.09	2727	.002
	Yes	7.63	3.07			
PT expected support scores	No	8.13	3.01	1.31	13359	.189
	Yes	8.03	3.01			
60-day						
RN expected support scores	No	8.27	2.63	19.16	10128	<.001
	Yes	7.22	3.43			
PT expected support scores	No	8.26	2.93	6.57	11680	<.001
	Yes	7.91	3.11			

Note: 30-day RN-RHDS responses: (n) no- 8972, yes-1759; PT-RHDS responses 7&8 no-8948, yes-1755; 60-day RN-RHDS & PT-RHDS responses: (n) no-7733, yes-5628

Table 3.6 Logistic Regression for Emergency Department Visits

	B	S.E.	Wald	df	Sig	Exp(B)	95% C.I. For odds ratio Lower	Upper
30-day								
RN expected support scores	-.028	.013	4.849	1	.028	.972	.95	1.00
PT expected support scores	-.003	.013	.044	1	.834	.997	.97	1.02
Hispanic	-.358	.081	19.642	1	<.001	.699	.59	.82
White	.330	.074	19.736	1	<.001	1.391	1.20	1.61
Married	.159	.070	5.242	1	.022	1.173	1.02	1.34
Age	-.006	.002	8.492	1	.004	.944	.99	1.00
Male	-.214	.068	9.870	1	.002	.807	.71	.92
Constant	-1.861	.168	9.870	1	<.001	.807	.71	.92
60-day								
RN expected support scores	- .031	.011	8.15	1	.004	.969	.96	.99
PT expected support scores	.002	.011	.04	1	.858	1.002	.98	1.02
Hispanic	1.265	.069	14.73	1	<.001	.767	.67	.88
White	.380	.062	37.28	1	<.001	1.462	1.29	1.65
Married	.210	.059	12.88	1	<.001	1.234	1.10	1.38
Age	-.005	.002	7.51	1	.006	.995	.99	1.00
Male	-.190	.057	10.97	1	.001	.827	.74	.93
Constant	-1.646	.143	132.35	1	<.001	.193		

Table 3.7 Logistic Regression for Observation Stays

	B	S.E.	Wald	df	Sig	Exp(B)	95% C.I. For odds ratio Lower	Upper
30-day								
RN expected support scores	-.020	.028	.51	1	.476	1.020	1.00	1.01
PT expected support scores	-.019	.026	.03	1	.469	.982	.93	1.03
Hispanic	.716	.202	12.58	1	<.001	2.046	1.38	3.04
White	.079	.141	.32	1	.574	1.083	.82	1.43
Married	.112	.130	.75	1	.385	1.119	.87	1.44
Age	.008	.004	4.19	1	.041	1.008	1.00	1.01
Male	-.204	.127	2.57	1	.109	.815	.64	1.05
Constant	-4.974	.363	187.30	1	<.001	.007	.86	.89
60-day								
RN expected support scores	-.134	.008	275.47	1	.004	.969	.96	.99
PT expected support scores	.040	.008	23.06	1	.858	1.002	.98	1.02
Hispanic	- .802	.049	270.25	1	<.001	.767	.67	.88
White	.895	.044	414.96	1	<.001	1.462	1.29	1.65
Married	.214	.042	25.63	1	<.001	1.234	1.10	1.38
Age	.004	.001	9.43	1	.006	.995	.99	1.00
Male	.123	.041	8.82	1	.001	.827	.74	.93
Constant	-.407	.106	14.87	1	<.001	.193		

Table 3.8 Logistic Regression for Readmissions

	B	S.E.	Wald	df	Sig	Exp(B)	95% C.I. For odds ratio Lower	Upper
30-day								
RN expected support score	-.001	.014	.003	1	.956	.999	.97	1.03
PT expected support score	.017	.014	1.457	1	.227	1.017	.99	1.05
Hispanic	-.150	.084	3.144	1	.076	.861	.73	1.02
White	.139	.074	3.518	1	.061	1.149	.99	1.33
Married	.042	.068	.382	1	.536	1.043	.91	1.19
Age	.009	.002	19.968	1	<.001	1.009	1.01	1.01
Male	.027	.067	.163	1	.686	1.027	.90	1.17
Constant	-3.170	.182	303.767	1	<.001	.042		
60-day								
RN expected support score	.005	.017	.085	1	.771	1.005	.97	1.04
PT expected support score	-.010	.016	.369	1	.544	.990	.96	1.02
Hispanic	-.277	.102	7.313	1	.007	.758	.62	.93
White	.142	.092	2.378	1	.123	1.153	.96	1.38
Married	-.010	.084	.014	1	.906	.990	.84	1.17
Age	.011	.003	17.639	1	<.001	1.011	1.01	1.02
Male	.022	.083	.071	1	.789	1.022	.87	1.20
Constant	-3.455	.220	245.538	1	<.001	.032		

Table 3.9 Logistic Regression for Combined Services

	B	S.E.	Wald	df	Sig	Exp(B)	95% C.I. odds ratio Lower	Upper
30-day								
RN expected support scores	-.013	.010	1.680	1	.195	.987	.97	1.01
PT expected support scores	.002	.010	.058	1	.809	1.002	.98	1.02
Hispanic	-.212	.061	12.111	1	.001	.809	.72	.91
White	.245	.054	20.628	1	<.001	1.278	1.15	1.42
Married	.080	.050	2.596	1	.107	1.084	.98	1.20
Age	.003	.001	3.572	1	.059	1.003	1.00	1.01
Male	-.118	.048	5.756	1	.016	.889	.81	98
Constant	-1.743	.127	1187.178		<.001	.175		
31-60-day								
RN expected support scores	-.101	.008	174.977	1	<.001	.904	.89	.92
PT expected support scores	.034	.008	20.506	1	<.001	1.035	1.02	1.05
Hispanic	-.588	.047	158.367	1	<.001	.555	.56	.51
White	.721	.040	321.466	1	<.001	2.056	1.90	2.23
Married	.313	.038	69.206	1	<.001	1.368	1.27	1.47
Age	.003	.011	9.922	1	.002	1.003	1.00	1.01
Male	.007	.037	4.046	1	.044	1.007	1.00	1.16
Constant	-.032	.098	.111	1	.739	.968		

Table 3.10 Summary of Logistic Regression Results

	ED Visit		OBS stay		Readmit		Combined Variable	
	30	**31-60**	**30**	**31-60**	**30**	**31-60**	**30**	**31-60**
High RN-RNDS score	↓2.8%	↓3.1%		↓12.5%				↓9.6%
High PT-RHDS score				↑4.1%				↑3.5%
Hispanic	↓30.1%	↓23.3%	↑104.6%	↓55.1%		↓24.2%	↓19.1%	↓44.5%
White	↑39.1%	↑46.2%		↑144.6%			↑27.8%	↑105.6%
Married	↑17.3%	↑23.4%		↑23.9%				↑36.8%
Older	↓.6%	↓.5%	↑.8%	↑.4%	↑.9%	↑1.1%		↑.3%
Male	↓19.3%	↓17.3%		↑13.1%			↓11.1%	↑.7%

CHAPTER 4

NURSE' PERCEPTIONS OF PATIENTS' POST-HOSPITAL

AVAILABILITY OF INSTRUMENTAL SUPPORT MAY IMPROVE

DISCHARGE PLANNING

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Nurse and patient perceptions of the availability of instrumental support, defined as assistance with personal and medical care from family and friends, for patients following discharge can differ. The goal of this retrospective cohort study was to evaluate the impact of nurses' and patients' perceptions of post-discharge expected instrumental support on subsequent unplanned acute care revisits within 60 days of hospital discharge. Two questions from the Readiness for Hospital Discharge Survey that specifically addressed help at home with needed personal care and medical care were used to ascertain registered nurse and patient perceptions of the available instrumental support the patient would have at home after discharge. Data were collected in 2018-2019 from adult (ages 18 years and over) patients (n=13,361) who were discharged from three urban hospitals within a single health care system in the southeast United States. Acute care revisit data, other covariates, and instrumental support ratings were extracted from the electronic health record. Statistical analysis was done using SPSS 26 and included descriptive statistics, t-tests, and binary logistic regression. The results of this research can be used to guide transitional care and enhance discharge planning. The study compared expected instrumental support among patients who did and did not receive unplanned revisits in the acute care setting within 60-days after an inpatient hospital discharge.

The 2010 Patient Safety and Affordable Care Act established the Hospital Readmissions Reduction Program (HRRP). HRRP created a performance and incentive-based healthcare payment system, including a financial penalty for hospitals that have high patient readmission rates within 30 days of discharge. Thus, high hospital readmission rates equate to lower reimbursement and are used as an indicator to evaluate

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the quality of inpatient care (Bailey, 2019). To reduce 30-day readmissions heath systems and hospitals have focused on evaluating patient risk factors, such as admission diagnoses and patient demographics (Braet et al., 2021). Process changes such as nurse to patient ratios, which have been found to increase the risk of hospital readmission (McHugh et al., 2021), and post-discharge follow-up such as telephone calls (Schuller et al., 2015), recipt of community paramedic visits (James et. al., 2020), facilitation patient follow-up with a prmary care provider (Weist et al. 2019) and more comprehensive transitional care interventions (Enderlin et al., 2013) have been evaluated to reduce 30-day readmissions. Efforts to reduce 30-day readmissions, have also included evaluating readmissions at specific times (e.g., 7 and 14 days) within the first 30-day after hospital discharge (Saleh et al., 2020).

Another recent focus has been on evaluating patients' readiness for discharge is a large, multi-site nurse-led study, the Readiness Evaluation and Discharge Interventions Study 2 (READI 2) (Weiss et al., 2019), utilizes nurse and patient input, along with other data, to determine patients' readiness for discharge. Results from the nationwide READI II study showed a 1.79% reduction in readmissions when nurses' and patients' perceptions of discharge readiness were assessed together (Weiss et al., 2019). The READI II study included information from the Readiness for Hospital Discharge Survey (RHDS), a tool used to collect nurse (RN-RHDS) and patient (PT-RHDS) perceptions of patients' readiness for discharge. Information collected in the tool's eight questions relate to the patient's personal status, knowledge of discharge instructions, perceived coping ability, and the expected support the patient would receive after discharge Two items are evaluated by nurses and patients in each section. The items on each version are parallel,

with the wording adjusted to be appropriate to the respondent. The patient completes the tool prior to the nurse. Responses are scored on a Likert scale, a lower score indicating the patient is not ready and a score of 10 indicating they are completely ready for discharge. The 'expected support" items on the scale specifically address instrumental support, focusing on whether the patient will have help at home, if needed, with personal and medical care after discharge (Weiss et al., 2010). These two items were selected for use in this study to represent the nurse and patient perceptions of whether the patient would have instrumental support available after discharge.

Help After Discharge

Instrumental support is a type of informal social support given during a time of need, for example after hospital discharge or during an illness. Examples of instrumental support during or after a time of illness include help with personal or medical care, transportation, scheduling and attending follow-up appointments, and meal preparation (Hajduk et al., 2018). Having instrumental support, assistance with personal and medical care from family and friends when needed, increases one's ability to follow the discharge plan of care, and recuperate after a hospitalization (Strunin et al., 2007). Insufficient instrumental support can lead to an increased risk of post-discharge complications including hospital readmission (Cakir et al., 2017; Strunin et al., 2007). Assessing a patient's need for additional help and the availability of supportive friends or family members who can be present to provide needed assistance after discharge may reduce hospital readmissions, especially in the older population (Greysen et al., 2014). In prior research patients reported needing extra help at home after discharge with personal and

medical needs, scheduling appointments, and accessing care, including transportation to appointments (Strunin et al., 2007).

Assessing Discharge Readiness

Our study used a subset of data collected from the READI II study to determine patients' and nurses' perceptions of expected instrumental support after discharge can be used as an indicator of receiving unplanned acute care use within 60 days discharge. Instrumental support was assessed using the mean scores from two items found on both versions of the RHDS (questions 7 and 8) that specifically address whether the patient will have help with personal and medical care, if needed, at home after discharge. Information was collected from both the patient and nurse within four hours prior to discharge and entered into the electronic health record (EHR). Previous studies have recommended including the assessment of available social support in the discharge planning process (Flythe et al., 2017), noting that traditional discharge processes may overlook social and functional gaps, which include the lack of support from family and friends after discharge (Greysen et al., 2014). Failing to identify these factors may increase the risk of hospital readmission (Greysen et al., 2014). There are tools that assess social support, but to our knowledge the RHDS is the only one that has been integrated into the EHR and used consistently as part of the discharge process to assess instrumental support availability.

Risk for Post Discharge Complications

A person's need for assistance with care extends beyond discharge because of the effects of hospitalization (Seben et al., 2019). Post-hospital syndrome is an acquired, transient condition resulting from stressors experienced by the patient during

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hospitalization, and characterized by changes in mood, decreased physical functioning, cognitive impairment, and gastrointestinal disturbances (Mesquita et al., 2015). Post-hospital syndrome increases the risk of negative outcomes after discharge and the need for assistance at home (Mesquita et al., 2015). Older patients are at risk to experience cognitive impairment, fatigue, apathy, malnutrition, and/or falls up to three months after a hospital admission (Seben et al., 2020). With the increased risk and extended time of post-hospitalization effects, there is a need to broaden the scope of research related to the post-discharge period to include emergency department (ED) visits, observation (OBS) stays, and readmissions and to evaluate unplanned acute care received beyond the 30-day period. Even when patients feel they are ready to go home, having adequate instrumental support at home after discharge may be associated with better patient outcomes, such as decreased risk for readmission (Chan et al., 2019, Seben et al., 2019).

Typically, after discharge if family members or friends can provide instrumental support, their available timeframe is limited. Adult children often need to return to work and home to care for their own families within days or perhaps weeks of a patient's discharge from the hospital. Thus, although 30-day hospital readmissions are an important focus for healthcare institutions due to the financial penalties, ED visits and OBS stays also have important quality, safety, and fiscal implications for patients, families, and health systems, as does the trajectory of the patient's recovery beyond 30 days after hospital discharge (Brownlee et al., 2017, Rising et al., 2013). Other researchers included care received in the emergency department when evaluating post-discharge revisits, and reported that more than 50% of the care received in the acute care setting, was in the emergency department (Rising et al., 2013). They stated that including

those visits would provide additional information to enable healthcare providers and facilities to work towards improving care transitions and potentially reducing acute care utilization after discharge (Rising et al., 2013). In our study, we went a step further by including OBS stays, ED visits, and readmissions as outcomes within 60 days after hospital discharge.

Results

RN-RHDS and PT-RHDS mean expected support scores were calculated for all patients discharged home after an index hospital admission (no prior admission in the previous 90 days). Logistic regression was used to evaluate the correlation between the expected support scores and unplanned care received (ED visits, OBS stays, readmissions) within 60-days of discharge. All statistical analysis was performed using SPSS version 26.0 software (IBM, Corp., Armonk, NY, USA). Analysis the RN-RHDS and PT-RHDS that assessed instrumental support using t-test revealed that the mean expected support scores were significantly lower (RN-7.22 versus 8.27, $p= .000$, and PT-7.91 versus 8.26, $p=.000$) for patients who received some type of care in the acute care setting within 60 days of discharge.

Logistic regression analysis showed that having a higher RN-RHDS score decreased the odds of a patient receiving an unplanned acute care visit by 9.6%, which is both clinically and statistically significant. Other variables were also statistically significant for receiving unplanned care in the acute care setting after discharge. Being Hispanic, decreased the likelihood by 44.5%, being White increased the likelihood by 105.6%, being married increased the likelihood by 36.8%, being older increased the likelihood by 0.3%, and being male increased the likelihood by 7.7%. Patients'

perceptions of having needed assistance after discharge has less association with subsequent acute care use based on logistic regression. In cases where patient's perceptions of support were associated with post-discharge acute care service, the association was in the wrong direction such that more expected support was associated with greater acute care utilization. This finding indicated that patients may have anticipated having help at home after discharge, but perhaps the help was not available or did not meet their needs. Having another person in the house may not equate to adequate help was noted by researchers providing an in-home assessment after discharge (Happ et al., 1997; Strunin et al., 2007). Thus, the nurse's assessment, but not the patient's assessment, predicted adequate instrumental support after discharge based on the need for post-discharge acute care services. The finding that nurses' perceptions are more accurate than patients' perceptions are consistent with prior studies that used the score of the entire RHDS (Weiss et al., 2010; Weiss et al., 2019). We recommend that additional research be done to evaluate the actual instrumental support patients receive after discharge. Utilizing a mixed-methods approach would allow researchers to evaluate quantitative data as well as perform an assessment of the quality and appropriateness of care provided by the informal caregiver.

Further, we found that patients had more ED visits and OBS stays in days 0-30 (1219) and days 31-60 (736) than readmissions alone (days 0-30 = 983 readmissions, 31-60 = 623 readmissions). Including all types of acute care revisits and extending the time from 30-days to 60-days increased the number of acute care visits captured by 2631 revisits (from 983-readmits visits in 30 days to 3561 total revisits in 0-60 days). This finding supports the need to consider post-discharge acute care more broadly. With the

potential need for instrumental support beyond the time help is available, the risk of an adverse event remains high, or may increase when the patient no longer has someone to assist with care during the post-discharge recovery period. One recent study, evaluating 1.6 million index hospitalizations, found an increase in the number of recently discharged patients being treated in the ED and in observation units, although there has been a modest decrease in hospital readmissions (Wadhera et al., 2019). The researchers hypothesized that this decrease in readmissions was a result of treating patients in the ED and observation unit in an attempt to keep readmission rates low, not a result of efforts to improve discharge procedures.

Implications for Case Management Practice

Although no previous studies had looked at the relationship between specific items on the RHDS and acute care received after discharge, our results are consistent with results that evaluated the overall scores. Lower scores on the RN-RHDS have been associated with post-discharge acute care utilization, including emergency department visits and unplanned hospital readmissions, demonstrating that nursing input regarding patient readiness for discharge is an important element of discharge planning (Weiss et al., 2010; Weiss et al., 2019). Thus, our results support including nurse assessment of expected instrumental support at home prior to discharge, as it may be helpful in identifying patients who are at high risk for experiencing post-discharge acute care utilization. Completing an RHDS and evaluating responses, may be a critical step in identifying people who can provide instrumental support after discharge. Our findings reinforce the criticality of including the potential caregivers in discharge planning. Assessing the willingness, capability and appropriateness of those individuals as informal

care providers is especially important. If needed post-discharge support is unavailable to the patient, referrals to community agencies to support the patient or reevaluation of the appropriateness of discharging the patient home can be initiated.

Conclusion

Our results suggest the importance of assessing patients' availability of post-discharge instrumental support and that nurses may have insight into the support the patients are likely to receive. Having this additional information may help case managers better prepare the patient and caregiver to manage the care transition from hospital to home. Our results underscore the significance of monitoring ED visits, OBS stays, and hospital readmissions for 60 days after hospital discharge. We found that including ED visits and OBS stays in addition to readmissions captured an additional 45% of acute services, providing case managers with supplementary information to improve care transitions, potentially reduce acute care utilization after discharge.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This study is grounded in the concept of care transitions from the hospital to home environment and used the Social Ecological Model developed by Bronfenbrenner (Bronfenbrenner, 1997) to develop the Social Ecological Model for Instrumental Support Related to Care Transitions to guide the research. The time of transition from hospital to home presents patients with challenges related to personal and medical care and often times people, regardless of age, need help. That help is usually provided by friends and families in the form of informal instrumental support. The findings of this study add to our understanding of the importance of instrumental support, the need for evaluation of supportive care beyond the 30-day post-discharge date and the value of the nurses' confidence that the patient will receive needed instrumental support.

Instrumental Support

There has been little research related to the concept of instrumental support, and the needs of the patient after discharge for an extended period of recovery time. The concept has not been widely used or studied and is often identified under the umbrella term of social support. When studied as a type of social support, the term "instrumental support" is not consistently used. Other terms such as tangible support, have been used to identify informal support received by others during a time of need. This research could contribute to promoting conceptual and operational clarity of the instrumental support.

The Effect of Instrumental Support on Healthcare Utilization After Discharge

This retrospective cohort study evaluated the association of the perceived availability of informal instrumental support to care sought by patients after discharge in the hospital setting including care received in the emergency department and

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readmissions. The study included the time-period of day of discharge to day sixty. The findings revealed that patients do have a significant number of acute care visits within the 31-60 days after discharge and that the nurse's perception of the availability of instrumental support at home after discharge to help with personal and medical care needs is associated with acute care utilization. Nurses are better predictors of available informal support than patients. Binary logistic regression showed a decreased likelihood of patient's seeking care for several different types and timeframes after discharge if the nurse score on the expected support with personal and medical care at home after discharge (RN-RHDS questions seven and eight) was high. Specifically, nurses' expected support scores were significantly associated to patients' revisits to emergency department within 0-30 and 31-60-days of discharge, observation stays within 31-60 days of discharge and any type of acute care during the for 31-60-day timeframe. Thus, the study findings demonstrated that items related to informal instrumental support on the RN-RHDS may be a useful indicator of potential available help at home after discharge, and that when scores are low, it is more likely they will have subsequent acute care visits.

Recommendations

Practice Setting

Healthcare providers and hospital systems should consider the importance of assessing the availability of informal support prior to discharge. Including the availability of instrumental support can provide insight about needed resources that patients have access to after discharge. Implementation of a tool like the RHDS will provide valuable information of not only patients' perceptions of readiness for discharge, but also nurses, input. Our research, as well as those of others (Weiss et al., 2010; Weiss et al., 2019),

suggest that nurses' perceptions of patients discharge readiness, including the availability of help at home with personal and medical care, may be a better predictor of post-discharge acute care utilization than patients' perceptions. Never-the-less, a team approach to the discharge planning process that includes not only patients, but also significant others is essential for high quality transitional care (Mitchell et al., 2018).

Nursing Education

Emphasizing the importance of holistic care as the foundation for nursing practice in nursing education should continue. Nursing programs should promote the concept of a team approach to discharge planning that includes both the patient and those who will provide care and support during the transition/post-discharge period. Teaching students that including patients and their caregivers in the discharge process can increase discharge instruction adherence and decrease negative outcomes is vitally important. Findings from our study affirm the value of the nurse's assessment to patient outcomes. The importance of the bedside nurse's value of the nursing assessment and the bedside nurse's perception of patient condition and interaction with significant others cannot be stressed enough throughout the curriculum.

Future Research

The need for instrumental support may extend beyond the time-period when help is available Healthcare facilities should consider making the RHDS, or a similar tool, a part of the nursing assessment and discharge planning process. Acknowledging the value of nursing input is an important step in improving patient outcomes, providing a team approach to discharge planning, and increasing the likelihood that the patient and family will follow the discharge plan.

Future research could use a mixed methods approach to include several aspects of the care transition process, the nurse and patient assessment, the evaluation of instrumental support received after discharge, the patient and family understanding of the plan of care, and an evaluation of the length of time family and friends are able to provide informal support. The study could determine if relationships exist between the effectiveness of instrumental support received and the RN-RHDS expected mean support score, further evaluating the validity of the nurse's assessment and expanding knowledge about how to improve discharge planning.

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