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Evaluating Discharge Readiness of Patients at a Primary Stroke Center

Amanda H. Green, BSN RN

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DNP Capstone Project Overview

The diagnosis of stroke is very prevalent in healthcare and it is estimated that someone in the United States suffers from a stroke every 40 seconds (Lloyd-Jones et al., 2009). In order to optimally prepare these patients for discharge and improve patient outcomes, it is important to understand the needs of the patient and caregiver and to meet these needs. In order to evaluate this, the focus of this project was to evaluate the discharge readiness of patients at a primary stroke center.

“Discharge Needs of the Stroke Patient and Caregiver” focuses on a review of the literature in order to determine the needs of stroke patients and caregivers as well as to identify interventions currently in place to meet these needs. “Maneuvering Through the DNP Capstone Process of Evaluating Discharge Readiness at a Primary Stroke Center” then discusses the capstone process. The journey of completing the capstone project was a challenging one and the manuscript outlines this process and provides guidance for the overcoming barriers that may present themselves. “Evaluating Discharge Readiness of Patients at a Primary Stroke Center” describes the pilot study completed in order to understand the discharge readiness of patients by examining the perceptions of readiness by both the patients and the healthcare team.

Discharge Needs of the Stroke Patient and Caregiver

Abstract

Stroke patients and the caregivers of these patients face unique challenges upon discharge from the hospital setting. The purpose of this article is to identify these various needs through a review of the literature and then to develop implications for practice for the healthcare providers who work with these patients and caregivers. This article will also review interventions that are currently in place with a goal of meeting the needs of this group. Once the needs have been identified, appropriate educational material for this patient population can be developed in order to improve the patient outcomes.

Introduction

Strokes are a common diagnosis in today's healthcare environment and can cause great emotional and financial burden to patients, families, and the healthcare system. Approximately 795,000 people in the United States experience a stroke each year and approximately 610,000 of these patients are suffering from their first stroke. Of those who survive a stroke, approximately 185,000 will have another stroke. In 2005, strokes were the cause of 1 out of every 17 deaths in the United States. The cost for a patient experiencing a stroke is also a significant healthcare expenditure; in 2009 the cost for patients with this diagnosis in the United States was approximately \$68.9 billion. This estimated cost includes costs for healthcare, medications, and missed work (Lloyd-Jones et al., 2009).

In the hospital, discharge planning and patient education are two components of the patient care by nurses that often do not receive as much attention or as needed, for a variety of reasons. These components are also viewed as time consuming tasks by nurses (Kalisch, 2006). However, both of these components are necessary in order to adequately prepare patients for a successful discharge from the inpatient setting. The Joint Commission has set forth standards for discharge instructions in the populations of stroke and heart failure patients. It has been found that patients who receive the heart failure instructions, which are identified as a standard of care, have a significantly lower risk of readmission than those who don't receive the instructions (VanSuch, Naessens, Stroebel, Huddleston, & Williams, 2006). This evidence illustrates the importance of appropriate discharge care.

Purpose

The purpose of this article is to examine the current literature related to the needs of stroke patients and caregivers upon discharge from the hospital. Interventions developed to meet the needs of the patients and caregivers will also be analyzed. This information can then be synthesized to develop best practices for the nurses who work with stroke patients and provide them with discharge education.

Methods

A search of PubMed was conducted using the term *stroke* with *patient, education, caregiver, discharge, or needs*. Only articles published in the previous six years were considered for the review in order to capture the most recent literature. Article titles and abstracts were then reviewed in order to determine if they discussed needs related to either the stroke patient or caregiver upon discharge or interventions to meet these needs.

Findings

Multiple articles were identified in the search and all were reviewed. Thirteen research articles were identified as being the most relevant to the discharge needs of the stroke patient and caregiver and were included in this review. The research in these articles was conducted internationally, including in the United States, Sweden, Australia, and Canada. Many of the articles were conducted outside of the United States which

represents a gap in the literature and a need for future research related specifically to healthcare practice in the United States.

Needs of the Patient

The needs of the stroke patient following discharge are clearly documented in the literature. A cross-sectional study of 799 patients conducted in the UK by McKeivitt et al. (2011) found that 49% of the stroke survivors who responded to a survey identified unmet needs that they had encountered in the long-term since their hospitalization. The unmet needs identified included problems related to physical, emotional, and social aspects of life. The identified stroke-related health problems included issues with mobility, falls, incontinence, pain, fatigue, emotional needs, loss of concentration, memory loss, speaking difficulties, problems with reading, and problems with sight. Patients also identified the need for information related to their stroke, diet, aids, home adaptations, driving capabilities, public transport, holidays, sexual relations, benefits, money management, employment, and strategies for moving homes (McKeivitt et al., 2011). This evidence shows important areas for nurses to include in discharge education to patients. Discharge education must go beyond information about basic needs such as activity and diet in order to meet the needs related to care management of these patients.

The needs of stroke patients in Canada were similar to those of patients in the UK. Moreland et al. (2009) conducted a cohort study of 209 patients in order to identify stroke patients' needs following discharge and found a variety of needs as identified by the patients. The perceived needs were related to social needs, physical impairments, therapy, recovery, and emotional needs. This study also examined the barriers to the

unmet needs and found components related to physical, emotional, environmental, and financial impairments among the barriers. Key barriers identified included the inability to drive and/or walk, fatigue, balance impairment, and fear of having another stroke or falling.

The fear of falling among stroke patients is also present according to a longitudinal study of 28 patients in the United States. Schmid et al. (2011) found that 54% of the participants in their study had a baseline fear of falling. The fear of falling decreased over a period of six months after the stroke as the balance of the participants increased. Participants with a baseline fear of falling also had significantly higher levels of anxiety and depression scores at six months after the stroke as well as lower levels of perceived quality of life. Nurses need to recognize this fear in patients and work with patients to overcome this fear.

A cross-sectional study of 188 patients conducted in Sweden also found that only half of those discharged following a stroke had the opportunity to participate in discussions related to discharge planning, goals, and rehabilitation needs following discharge. Younger patients perceived higher levels of participation in the planning process when compared to older patients. There was also a higher level of participation in the discharge process by patients who experienced more independence in function five days after admission (Almborg et al., 2008). Healthcare providers must work to actively involve the patients in discharge planning. Discharge planning meetings should include the patient whenever possible in order to improve the discharge experience for the patient.

Hoffman and McKenna (2006) conducted a cross-sectional study of 57 patients that examined the informational needs of stroke patients discharged in Australia. They found that only 22.8% of patients received written information about stroke and that the mean reading level of the material was 11th grade while the patients were only able to read a mean of 7-8th grade. Patients with either combined or receptive aphasia read at a much lower level (Hoffman & McKenna, 2006). Discharge education should be reviewed in healthcare facilities to ensure that the education level of the material is appropriate for the patient population. Nurses must also be conscious of the terminology used in discharge education in order to keep the education on an appropriate education level for the patient.

Almborg, Ulaner, Thulin, and Berg (2010) conducted a cross-sectional study in Sweden of 188 patients to examine the health-related quality of life (HRQoL) in stroke patients following discharge. According to this study, HRQoL is related to fewer depressive symptoms, participation in activities of interest, increased socialization, participation in the discharge planning process, length of hospitalization, age, sex, and education. It was found that men had significantly higher HRQoL than women related to physical functioning and that women had higher scores related to depression. Nineteen percent of the patients experienced depression following a stroke. Participation in social activities also decreased significantly post-stroke which illustrates the need for discussion regarding the importance of this during discharge planning.

Needs of the Caregiver

A longitudinal study of 58 caregivers conducted by King, Ainsworth, Ronen, and Hartke (2010) examined problems experienced by these subjects in the United States. The three key themes which emerged consisted of problems connected to the sustainment of the self and family, functioning of the stroke survivor, and disruptions in interpersonal life. Caregiver role demand was the problem that was reported most frequently by the participants. The most stressful problem encountered in the study was the disruption of interpersonal life for the caregiver. Caregivers need to be provided with appropriate support to handle the demands of their new role. Healthcare facilities should offer these resources to caregivers upon discharge, if not sooner, in order to prepare caregivers for transition into this new role.

King, Hartke, and Houle (2010) conducted a cross-sectional study of 253 caregivers and 235 stroke survivors in the United States that examined relationships that existed between the characteristics of caregivers, stroke patient characteristics, outcomes of the caregiver, and coping. Six significant relationships were identified in this study. The first relationship found was that nonwhite, older caregivers who were in poorer health experienced more unmet needs and perceived less threat in their coping ability. The second relationship identified was that nonwhite caregivers who were younger and in better health viewed the stroke in a less threatening manner, perceived greater benefits, and used avoidance problem solving. Caregivers who viewed their role in a threatened perception were also more like to feel distress, be pessimistic and less confident in their care giving role. Caregivers also often experienced a conflict in their coping ability and also may have used inadequate coping. The final relationship found was that nonwhite

spouses who were caregivers experienced less anxiety, more positive life changes, and their family relationships were less healthy. It was also found that 74% of the participants in the study experienced depression (King et al., 2010).

Caregivers in Sweden also indicated that they need more information at discharge and perceived that they were not involved in setting goals and identifying needs for the stroke patient upon discharge in a prospective cross-sectional study of 152 relatives of stroke patients. In regards to information needs, 53% of the caregivers felt that they didn't receive information about medications, 51% felt they weren't educated regarding rehabilitation, 46% responded that they didn't receive information about care, and 49% didn't receive information about community support. Eighty percent of the participants perceived that they didn't participate in discussions regarding discharge planning, goal setting, and need identification. Caregivers of patients with a longer hospital stay had higher perceived levels of participation as did caregivers with higher education, female caregivers, and caregivers of female patients (Almborg et al., 2009).

Hoffman and McKenna (2006) examined the written information provided to caregivers of stroke patients discharged in Australia using the Simple Measure of Gobbledygook (SMOG) readability formula and Suitability Assessment of Materials. It was found that only 41.7% of the caregivers received information. The average reading level of the material was 11th grade and the caregivers read on average at a 9th grade or higher reading level.

Greenwood, Mackenzie, Wilson, and Cloud (2009) conducted a qualitative study in England in which they interviewed 31 caregivers of stroke patients. The key theme

identified in this study was the uncertainty associated with caring for stroke patients following discharge. The issues related to the uncertainty of care giving ranged from short-term to long-term during the study. Initially the caregivers were concerned with the prognosis and uncertainty about how life would change following discharge. In the long-term the caregivers remained concerned with disability of the stroke patient as well as needed support in care giving for the patient.

There are multiple barriers and facilitators that have been identified by caregivers of stroke patients. In a qualitative study in Canada, caregivers were contacted by the study team in order to identify these barriers and facilitators (White et al., 2007). Fourteen caregivers participated in the study and the barriers identified included a lack of collaboration with the healthcare team, negative lifestyle changes, a lack of community support, and a high level of intensity in the care giving situation. Facilitators which were identified by the caregivers included coordination of care by the healthcare team, a positive progress toward normalcy, mastery of the role of the caregiver, and a supportive social environment (White et al., 2007).

Intervention Programs in Place

Cameron and Gignac (2007) developed a conceptual framework with the aim of addressing the needs of the caregivers of stroke patients based on the five phases of support that are needed. The five phases identified include the event/diagnosis, stabilization, preparation, implementation, and adaptation. The event/diagnosis of the stroke patient occurs in the hospital and during this time the caregiver needs information about the diagnosis, prognosis, and treatment of the patient as well as emotional support.

Stabilization also occurs in the hospital and during this time the caregiver needs to know about the cause of the stroke as well as needs of the patient. The caregiver continues to need social support during this time and training to begin to assist the stroke patient with activities and therapy. Preparation of the stroke patient occurs prior to the discharge, ideally at the time of admission, and during this time the caregiver needs to understand community resources that are available. The caregiver also needs emotional support regarding uncertainty and support on a social level. Training should include learning about therapy and assisting in the patient in daily activities. The implementation phase begins once the patient is at home and during this time the caregiver needs to continue to learn about managing activities and daily life while being supported emotionally regarding anxiety that may exist due to the adaptation to home life. Adaptation occurs once the patient has been at home for a substantial period of time. The caregiver needs to continue to learn about participating in social activities and planning for the future while also receiving social support. This framework was then examined in a qualitative study of 24 stroke caregivers and 14 healthcare professionals (Cameron et al., 2013) and three themes were found. These identified themes include information about the type and intensity of support needed, the method of providing this support, and the primary care focus. Healthcare professionals need to provide caregivers with a family centered care model and address the needs as they extend across the continuum of care.

Schure et al. (2006) conducted a randomized study of 257 participants in the Netherlands in which caregivers were either assigned to a group program, a home visiting program, or a control group. Caregivers in both the group program and home visiting program worked with nurses during the study who offered support and information to

them. The caregivers were pleased with having this additional support and wished for this type of continued support following the study. This study shows that continued support of the caregivers of stroke patients is appreciated. Those who were in the home visiting program did express that they missed the contact with other peers while those in the group program expressed a need for more individualized support. Those who were in the group program appeared to benefit more from the informational and emotional aspects of the program according to surveys. Caregivers who preferred the group program were those who were more heavily burdened with their role, used active coping more, and were caring for a more psychologically impaired stroke patient (Schure et al., 2006).

Hackett et al. (2012) developed a program in Australia aimed at preventing depression in stroke patients. During this randomized trial, 100 patients in the intervention group were sent an encouraging postcard on a monthly basis for five months following discharge after a stroke. They were then compared with 101 patients who received normal care. It was found that there wasn't a significant difference in depression of the intervention group using the Hospital Anxiety Depression Scale (HADS) despite the fact that many patients expressed positive feedback about the postcards.

Implications for Practice

The literature illustrates that both stroke patients and their caregivers face numerous needs following discharge that need to be initiated in the hospital setting and continued in the transition to home post-hospitalization. It is important that these needs

be addressed in order to improve outcomes for both the patients and caregivers following discharge. While there are a few interventions that have been developed, there is no evidence in place that provides interventions to meet all of the needs that have been identified. Healthcare providers, specifically nurses who are responsible for patient and caregiver education, need to be aware of the needs that have been identified in order to improve the discharge education process. Discharge education should be thoroughly reviewed to ensure that all areas of life following discharge are addressed. Discharge instructions must go beyond the basics of self-care, activity, and diet. The education level of discharge instructions is also important and should be evaluated by healthcare facilities in order to make sure that patients and caregivers are able to understand the information provided to them.

Table 1 provides an overview of all of the needs identified by stroke patients in the literature as well as the implications for practice. A great deal of educational material needs to be developed for this patient population using the current resources available. When developing educational material it is also important to consider the reading level of the material and the population that will be receiving it. The educational material should address topics such as mobility, incontinence, pain, fatigue, emotional needs, concentration, memory, speaking, reading, sight, diet, home adaptations, aids, moving, driving, public transportation, holidays, sexual relations, benefits, money management, and employment. Barriers that stroke patients have identified also need to be included in educational material so that stroke patients can be aware of these common barriers such as the inability to drive/walk, fatigue, balance impairment, fear of having another stroke, and fear of falling. If patients are aware of the barriers and interventions to overcome

them then they will be more likely to experience positive outcomes following discharge. Depressive symptoms are also commonly reported by stroke patients and therefore patients need to be aware of the high prevalence of these symptoms and ways to combat them should they occur. Finally, patient involvement in discharge planning and goal setting is a commonly reported need and therefore the healthcare team should work to involve the patient in this process whenever possible.

Table 1: Patient Needs and Implications for Practice

Patient Needs	Implications for Practice
Education related to -mobility - incontinence -pain -fatigue -emotional needs - concentration -memory -speaking -reading -sight -diet -home adaptations and aids - moving -driving -public transport -holidays -sexual relations -benefits -employment -money management	Develop and implement educational material that addresses these needs and is written at an appropriate reading level
Education related to overcoming barriers including -the inability to drive/walk -fatigue -balance impairment -fear of having another stroke -fear of falling	Develop and implement educational material that informs patients about barriers to expect and interventions to overcome these barriers
Education related to -depressive symptoms -management of these symptoms	Develop and implement educational material about the prevalence of depressive symptoms in this population and ways to deal with these symptoms
Involvement in -discharge planning -goal setting	Actively involve the patient in discharge planning and goal setting during hospitalization

Table 2 lists the needs identified in the literature by the caregivers of stroke patients and the implications that these needs should have on practice by healthcare providers, specifically nurses who are providing discharged education to these caregivers.

The caregivers of stroke patients need to recognize the most common problems that others have encountered, which include problems associated with the sustainment of self and family, functioning of the survivor, and disruptions to interpersonal life. Caregivers need to be aware of these problems as well as equipped with the necessary resources to overcome them. Uncertainty is another key theme recognized by caregivers and therefore they should be educated to understand that this will occur and given ways to address this uncertainty when it does occur. Caregivers also need to realize that depressive symptoms commonly occur following discharge and should be aware of what these symptoms are as well as how to deal with them. Community and social support systems are vital for the caregivers and therefore educational material needs to be provided to them to make them aware of the resources that are available. Barriers such as lack of collaboration with the healthcare team, lack of community support and the intensity of the care giving situation have also been recognized by stroke patient caregivers and the healthcare team needs to realize the barriers so that they can work with the caregivers to overcome them. Likewise there are certain facilitators that have been identified such as coordinated care by the healthcare team, positive progress toward normalcy, mastery of the caregiver role, and a supportive social environment. Healthcare teams also need to be aware of facilitators that can improve outcomes in order to promote the achievement of these facilitators.

Table 2: Caregiver Needs and Implications for Practice

Caregiver Needs	Implications for Practice
Education related to -problems associated with sustainment of the self and family -functioning of the survivor -disruptions to interpersonal life	Develop an education program for caregivers that addresses key problems that will be faced
Education related to -depressive symptoms -management of these symptoms	Develop educational material about the prevalence of depressive symptoms in this population and ways to deal with these symptoms
Involvement in -discharge planning -goal setting	Actively involve the caregiver in discharge planning and goal setting
Assistance in identifying -community support systems -social support systems	Develop educational material about the community and social support systems that are available
Education related to -caregiver uncertainty following a stroke	Develop educational material that addresses uncertainty that will occur for the caregiver and ways to address this uncertainty
Identification of common barriers including -lack of collaboration of the healthcare team -negative lifestyle changes -lack of community support -intensity of the care giving situation	Recognize these barriers and work with caregivers to give them resources to overcome them
Identification of facilitators for caregivers including -coordinated care by the healthcare team -positive progress toward normalcy - mastery of the caregiver role -supportive social environment	Recognize these facilitators and work with caregivers to ensure that they are able to obtain these facilitators

Conclusion

In conclusion, multiple opportunities for improvement regarding the discharge education and needs of stroke patients and caregivers have been identified in the literature. Limited research has been conducted to identify the needs of the patient and the caregiver, as well as barriers and facilitators to education. Healthcare providers, specifically nurses who work with these patients and caregivers, need to be aware of

these needs in order to improve the discharge process. There is a need for additional educational material to be developed in order to adequately prepare these patients and caregivers for discharge. Improved outcomes for this patient population can be recognized through better patient and caregiver education.

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**Maneuvering Through the DNP Capstone Process of Evaluating Discharge
Readiness at a Primary Stroke Center**

Abstract

In order to obtain a DNP, the student must complete a final DNP project that allows the application and incorporation of the skills learned into the program into practice. This project, or capstone, is essential in the student learning process but can also prove to be challenging. This article examines the process and identifies barriers that occur. The timeline to complete the project as well as techniques to successfully maneuver through the DNP process are discussed.

Introduction

The Doctor of Nursing practice (DNP) is a degree with a focus on nursing practice and has been recommended by the American Association of Colleges of Nursing (AACN) as a replacement for the master's degree program (AACN, 2004). The “final DNP project” is important in the education experience of the DNP student and focuses on applying the principles learned during the program (AACN, 2006). This case study focuses on the experience of a student enrolled in the bachelors of science in nursing to DNP bridge program at a college of nursing located in the southeastern region of the United States.

Description of DNP Requirements

The requirements for the DNP program include the completion of a final project which is a practice based project, also known as a capstone. This project is completed during the clinical residency portion of the curriculum which is a class taken in the final two semesters of the program. The work done in the residency is cumulated into three scholarly papers which are interrelated and apply to the topic of interest selected by the student as a focus during this portion of the program. In order to prepare for the project portion of the residency, one of the courses in the program focuses on the protection of human subjects. This course includes the composition of the Institutional Review Board (IRB) application related to the study of interest as selected by the student.

The capstone focus area chosen in this case study was the evaluation of the discharge readiness of stroke patients. In the final project, patients diagnosed with an acute ischemic stroke, hemorrhagic stroke or transient ischemic attack (TIA) were asked

to complete the Readiness for Hospital Discharge Scale on the day of discharge. This instrument contains 23 items and evaluates the patient's perception of his/her discharge readiness (Weiss & Piacentine, 2006). This same tool was also completed by the members of the medical team on the day of discharge. The Readiness for Hospital Discharge Scale has been validated and has found to be helpful in measuring readiness for discharge. The goal of the project was to learn more about the discharge readiness of the patients, the communication regarding discharge between patients and medical team members, and to identify strengths and weaknesses with the discharge education and process in this one hospital.

Projected Timeline for Capstone Requirements

The expectation is that the capstone requirements can be completed in three semesters. The course related to the IRB is completed in one semester and the clinical residency is completed in two semesters. At the end of the IRB course, the application for the IRB should be completed and ready for submission to the IRB. The IRB application is then projected to be approved prior to the start of the clinical residency. During the clinical residency, data collection will occur along with the completion of the three scholarly manuscripts.

Actual Timeline for Capstone Completion

In actuality, the completion of the capstone requirements took longer than expected. The IRB application was completed in the intended semester. However, gaining approval by the IRB necessitated an additional semester of work on the application. This was due to the extensive process of gaining approval by other

committees prior to obtaining IRB approval. The clinical residency also took longer than two semesters to complete due to barriers related to organizational change that affected the population of interest for the capstone project. These barriers to progression added an additional semester of coursework to the projected timeline.

Barriers to Progression

There were three main types of barriers that prevented completion of the capstone project. These included IRB application barriers, the impact of organizational change on data collection, and the IRB modifications that resulted from the organizational change. When combined, these barriers necessitated an additional semester of work in order for complete the project.

The IRB application barriers were related to the approval of the project by committees within the institution. These groups have instructed the IRB that their approval of applications is necessary prior to IRB approval for research within the institution. Due to the fact that the proposed project involved medical students and residents who were members of the healthcare team on the day of discharge, it was necessary to gain approval of the application from Graduate Medical Education (GME) prior to IRB approval. GME residents are considered a convenient sample to study and can be at risk for coercion (Keune et al., 2013). In gaining approval, it was necessary to provide the GME with information that clearly explained the importance of having resident participation in the study. It was also important to clearly delineate the time commitment for the study in order to assure that the residents would have adequate time to complete the study. The IRB application was sent to the GME who then reviewed it.

After the submission to the GME, questions were then relayed back to the investigator for clarification. This process was completed multiple times prior to the final approval by the GME. This process took over two months to complete.

An additional group within the organization that had to approve the IRB application was the council that oversees nursing research. However, the need for this approval was discovered after the application was submitted to the IRB. This approval was gained through attending a council meeting and explaining the project proposal. While this approval didn't add extra time to the approval process, it was a surprise to discover the need for this additional approval.

Organizational change also impacted the length of time necessary to complete the capstone project. The proposal for the project was started in the fall of 2011. At this point, the intended group of patients to be studied only included acute ischemic stroke patients being discharged home. Key stakeholders related to the project were approached and approval was achieved. These stakeholders included physicians and nurses working closely with these patients. The intended group of patients was discussed, and it was decided that there would be a substantial amount of patients with this diagnosis being discharged home on regular basis. Once the data collection began in the fall of 2012, the acuity of the stroke patient population had changed. These changes were due to the success of an affiliate program developed with outlying hospitals. As part of this program, outlying hospitals in smaller communities were educated on the care of stroke patients. Therefore these hospitals began to keep patients with less severe strokes instead of transferring them to the larger academic medical center. This impacted the specific patient population of interest which had initially begun as acute ischemic stroke patients

being discharged home. With the changes in the organization, the acute ischemic stroke patients being treated in this hospital had more severe symptoms and therefore needed a higher level of care at discharge and weren't going home. The outlying hospitals had been appropriately trained in the care of stroke patients and were not transferring the patients with less severe symptoms to the organization. In order to obtain participants for the capstone, it was then necessary to modify the diagnosis of patients to include acute ischemic strokes, hemorrhagic strokes, and TIA's.

These organizational changes then led to the third barrier to capstone progress which consisted of IRB modifications. In the original IRB application, acute ischemic stroke patients being discharge home were to be identified the day prior to discharge at the morning huddle. This initial protocol was implemented for one month and there weren't any patients that qualified. Due to the changes, the few patients with a diagnosis of acute ischemic stroke being discharged home had a length of stay of less than one day. Therefore it wasn't possible to identify them the day prior to discharge. They were being identified on the day of discharge and therefore couldn't be included in the study. The first IRB modification included a change in the identification process. With the new protocol, patients were to be identified on the day of discharge. This new protocol was implemented for a month and during this time only one patient was identified as a potential participant. However, this patient did not agree to participate.

At this point, the need for a second IRB modification was identified. It was then decided that patients with a diagnosis of ischemic stroke, hemorrhagic stroke or transient ischemic attack would be included. It was also decided that the desired pilot population would be reduced from 30 participants to 10 participants. This second modification was

then submitted to the IRB and approved. The process of identifying the need for and obtaining these two modifications prolonged the capstone process and added an additional semester to the length of time needed for data collection. After the second modification was approved, the data collection occurred within a ten week period.

Lessons Learned During the Capstone Process

The most important lesson learned during this process is that unexpected barriers will occur and data collection will take longer than anticipated. In order to overcome these barriers and complete the project, flexibility was essential. In addition to flexibility, a student must be willing to make changes and innovatively make necessary modifications in order to reach the end goal. The lessons learned during the capstone process can also be used following graduation upon entry into practice as a DNP graduate. The DNP graduate should possess leadership qualities that include fearlessness, vision toward the future, knowledge and competence of the clinical setting, and the ability to participate in partnerships (Chism, 2009). Learning to overcome barriers related to the capstone process provided opportunity to strengthen the skills learned in the DNP program.

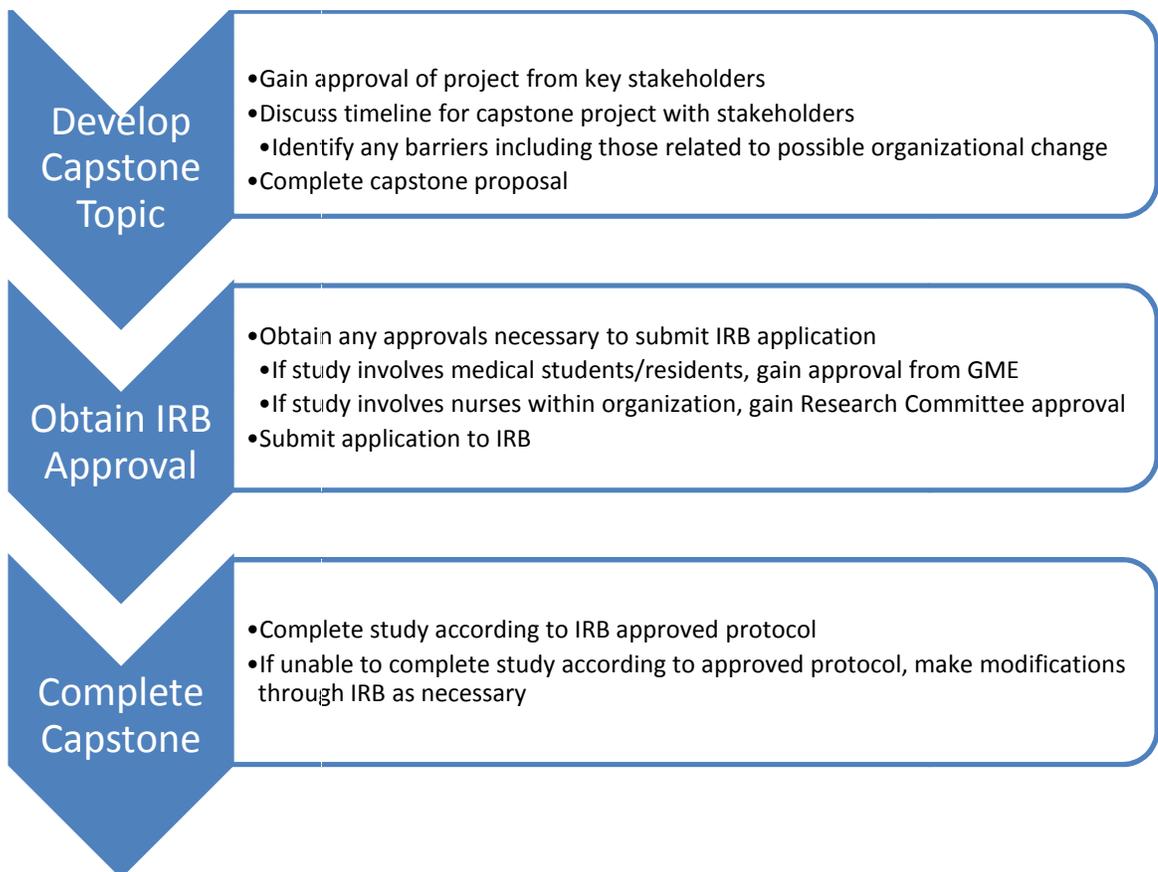
The importance of a strong advisor and capstone committee was also recognized. An advisor who is able to provide guidance and support through all of these barriers is essential in completing the research project. Strong nursing faculty members are able to use professional experience to guide students through the process while also teaching them to think innovatively and be flexible with the research process. When nursing

faculty members are able to provide clear direction, students are able to successfully navigate through the process (Nelson & Sacks, 2007).

Recommended Improvements to the IRB Process

A clearly delineated plan for achieving IRB approval would be beneficial to students. Potential barriers to the process should be clearly described to students so that preparation can be made to overcome them. A checklist that illustrates all of the needed approvals would be helpful to students and would allow them to prepare appropriately for the process. Figure 1 shows a clear delineation of this process that could be utilized by students.

Figure 1: The Capstone Process



The course that focuses the protection of human subjects should also include a section related to IRB modifications. This would allow students to become familiar with this process in the event that a modification was necessary. Although the intention is that students will not have to make modification to the IRB application, outside influences may make it necessary to modify the research protocol in order to identify participants or gain the necessary information from them. Students may also have future careers in nursing that involve IRB applications and modifications. This education would allow them to be prepared for this portion of the IRB approval process should it be necessary at some point in their future career.

Recommended Improvements to Maneuvering Organizational Change

Organizational change is inevitable and is necessary in the growth process. However, students need to recognize this and prepare adequately for it in the capstone process. When approaching stakeholders related to the population of interest, students should inquire about any upcoming changes that may affect the study. If students are aware of upcoming changes, then they will be better prepared to handle them when they do occur. It would also be beneficial if curriculum that identified techniques to identify and maneuver through organizational change in the program discussed how this change could impact capstone projects. While much emphasis is placed on change in nursing curriculum and the importance of handling change in a positive manner in order to promote improved outcomes for the patients and staff, it is also important to discuss the impact of change on research within healthcare.

Conclusion

In conclusion, the DNP capstone process can be difficult to maneuver. In order to assist the DNP student in completing the final portion of the DNP program, it is important for faculty to be aware of barriers that may arise and to educate students on ways to overcome these barriers. When handled appropriately, the capstone process can be extremely beneficial in preparing the DNP student to work in nursing with this degree.

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Evaluating Discharge Readiness of Patients at a Primary Stroke Center

Abstract

Purpose: The purpose of this feasibility study was to identify: 1) the difference patients' and healthcare providers' RHDS scores on the day of discharge, 2) the patients' RHDS scores on the day of discharge and five to seven days after discharge, and 3) healthcare providers' scores on the RHDS on the day of discharge and patients' scores at five to seven days after discharge.

Setting: This feasibility study was conducted in a primary stroke center accredited by The Joint Commission.

Design: A descriptive design was used to guide this feasibility study. Patients participating in the study completed a pretest-posttest and comparisons were made between patients and providers at each time point.

Subjects: Ten adult patients and the multidisciplinary healthcare providers caring for them participated in the feasibility study. These patients had a diagnosis of acute ischemic stroke, hemorrhagic stroke or transient ischemic attack and were being discharged home. In order to participate in the pilot study, the patient was required to have a Glasgow Coma Scale score of 15 on the day of discharge and to have a telephone at home in order to be contacted at five to seven days post discharge.

Measurements: The Readiness for Hospital Discharge Scale (RHDS) was used to assess the patients' and healthcare providers' perception of discharge readiness.

Procedure: The patients and healthcare providers completed the RHDS on the day of discharge. The patient was also contacted at five to seven days after discharge in order to complete a follow up RHDS.

Results: Thirty five RHDS's were completed on the day of discharge by 10 patients, 7 nurses, 7 physicians or advanced practice providers, and 1 patient care facilitator during this feasibility study. The results for each the individual questions on the RHDS are presented along with the results of the four subscales that include personal status, knowledge, coping ability, and expected support. No clinically meaningful difference was found between the scores of the patients and healthcare providers. A one-way ANOVA was used to compare the results of the subscales among participants. A significant but not clinically meaningful difference was found among the scores of the participants on the knowledge subscale. The patient care facilitator had a significantly higher but not clinically meaningful score on this subscale than the patient, physician or advanced practice provider, and nurse. Four of the ten patients completed the follow up RHDS at five to seven days after discharge. Due to this small response rate, analysis of the data was not completed to compare patients' and healthcare providers' scores on the day of discharge and after discharge.

Conclusions: When the responses to the individual questions as well as the subscales were compared, there was no clinically meaningful difference found between the scores. All of the questions and subscales had similar means. The lack of significant difference in the scores illustrate that the perceptions between the patients and healthcare providers are similar. Future research should focus on using this scale in a larger sample of patients and a primary stroke center as well as incorporating of the scale into daily patient assessment and improving completion of the RHDS by patients after discharge.

Background

The discharge process is an important part of the hospital stay for patients and appropriate planning is necessary in order to prevent readmission or adverse outcomes following discharge. Readmissions can occur due to poor quality of care or poor transitions between the hospital and home. Patients need discharge planning that will prepare them to continue recovery at home so that they are ready for the discharge transition. Miller, Piacentine, & Weiss (2008) found that some patients have difficulties coping at home following discharge due to stressors, self-care, condition management, social issues, and information needs that weren't addressed prior to discharge. These patients who identified information needs after discharge wished they had been given more details regarding recovery, diagnosis, disease, and treatment prior to discharge.

A study that looked at Medicare patients treated for an acute ischemic stroke between April 2003 and December 2006 found a 30 day unadjusted death or readmission rate after discharge of 21.4% (Fonarow, Smith, Reeves, Pan, Olson, Hernandez, Peterson, & Schwann, 2011). Those patients who bounce back, or move from a low to higher intensive care setting, within 30 days of discharge have a poorer survival rate and the survival rate decreases for each additional bounce back (Hind, Smith, Liou, Pandhi, Frytak, & Finch, 2008). Therefore it is very important that patients discharged with an acute ischemic stroke have a smooth discharge process and adequate planning.

Discharge planning and patient teaching are two components of patient care that nurses report to be time consuming and frequently not completed to the fullest potential (Kalisch, 2006). However, both of these components are necessary in order to adequately

prepare patients for a successful discharge from the inpatient setting. The Joint Commission on Accreditation of Healthcare Organization has set forth standards for discharge instructions in the population of stroke patients as well as heart failure patients. It has been found that the heart failure patients who receive these instructions have a significantly lower risk of readmission than those who don't receive the instructions (VanSuch, Naessens, Stroebel, Huddleston, & Williams, 2006). This evidence illustrates the importance of appropriate discharge care for patients.

Measurement

The Readiness for Hospital Discharge Scale (RHDS) was developed as a measurement tool in order to determine the perceptions of patients regarding their readiness for discharge from the hospital setting. Weiss developed this scale which examines four main components of the patients' perceptions regarding discharge. These four components include personal status, knowledge, coping ability, and expected support. Personal status can be defined as the physical and emotional state of the patient. The perception of the patient regarding the adequacy of information that he/she has received in preparation for the post-discharge period is measured in the knowledge component. Coping ability is measured in regard to the patient's perception of the ability to manage any needs related to personal or health matters that may arise in the post-discharge period. Expected support can be defined as the patient's perception of emotional and physical assistance that will be available through friends and family following discharge. The scale is composed of 21 items based on the four components. Seven items on the scale are related to personal status, eight items are related to knowledge, three items are related to coping ability, and five items are related to expected

support. Each item is presented in a question form with the respondent choosing a number from 0 to 10 as an answer. A higher score on the scale reflects a greater perceived readiness for discharge (Weiss & Piacentine, 2006). Internal consistency on the subscales of the RHDS-Adult form with 21 items ranged from .82 to .92 (Weiss et al., 2007). Calculation of Cronbach's alpha on this sample was .87.

The Readiness for Hospital Discharge Scale (RHDS) has been used in conjunction with measurement of postdischarge utilization in the population of parents of hospitalized children. It has been found that when contacted three weeks following discharge, 33.6% of parents had made calls to friends and family, 37.8% had made calls to providers, 23.4% had an unscheduled office or clinic visit, 31.9% had made calls to the hospital, 16% had been to urgent care or the emergency room, and 15.1% had been readmitted (Weiss, Johnson, Malin, Jerofke, Lang, & Sherburne, 2008). Another study that examined RHDS and postdischarge utilization found that only 2.7% of the participants did not utilize any health services during the three weeks immediately postdischarge (Weiss, Piacentine, Ancona, Gresser, Toman, & Vega-Stromber, 2007).

The RHDS has been used and studied in order to determine relationships that may exist between the perceptions of nurses and patients. It has been found that the nurses' scores on the scale are positively associated with postdischarge utilization at a stronger degree than the patients' scores. Discharge utilization was defined as a readmission or ED visit that was unplanned and occurred in the 30 days following discharge from the hospitalization. When patients' and nurses' scores are compared, the nurses' scores are also higher on the scale, especially in regard to the components of personal status and

knowledge. This higher score indicates that the nurses perceive the discharge readiness to be greater than the patients. (Weiss, Yakusheva, Bobay, 2010).

Multiple studies have been conducted that look at the RHDS and one has also been conducted that compared the scores of nurses to those of patients. However, the literature does not provide evidence that the scale has been used with other healthcare professionals. This study will examine the relationship between the scores of multiple healthcare providers with those of patients experiencing an acute ischemic stroke, hemorrhagic stroke, or transient ischemic attack (TIA).

The literature also does not provide evidence that patients have been contacted five to seven days postdischarge to reevaluate their perception of their perceived readiness. It is suspected that patients are most likely to be able to effectively and honestly evaluate their readiness immediately following discharge. The results of previous studies also illustrate that there is a lack of understanding on the part of healthcare providers in regard to what patients and parents need to know prior to discharge. This study also seeks to determine if the patients' perceptions of readiness have changed in the five to seven days postdischarge based on any challenges that may have risen.

Theoretical Framework

The framework for this study is based on the transition theory. According to this theory as outlined by Meleis, Sawyer, Im, Messias, and Schumacher (2000), patients and families undergo developmental, health and illness, situational, and organizational transitions. While going through these transitions, patients and families experience the

properties of awareness, engagement, change and difference, time span, and critical points and events. Transitions can either be facilitated or hindered by personal, community, or societal conditions. In order for a healthy transition to occur, patients and families need to feel connected, experience interaction, be situated, and develop confidence and coping. Acute ischemic stroke, hemorrhagic stroke, and TIA patients undergoing discharge are going through a new transition in their healthcare. This framework can guide the understanding of this transition period.

Methods

Design

A feasibility study was conducted at a primary stroke center as certified by The Joint Commission. This descriptive study was conducted over 7 days and included a pretest and posttest by the patients. Comparisons between the patient and provider responses were made at both points. The purpose of the study included identifying the differences between: 1) patients' and healthcare providers' RHDS scores on the day of discharge, 2) the patients' RHDS scores on the day of discharge and five to seven days after discharge, and 3) healthcare providers' scores on the RHDS on the day of discharge and patients' scores at five to seven days after discharge.

Sample

Approval from the Institutional Review Board was obtained and consent was obtained from ten adult patients and the multidisciplinary healthcare providers caring for them to participate in a pilot study. These patients had a diagnosis of acute ischemic stroke, hemorrhagic stroke or transient ischemic attack and were being discharged home.

In order to participate in the pilot study, the patient was required to have a Glasgow Coma Scale score of 15 on the day of discharge. The GCS is based on observed eye opening, motor response, and verbal response. Patients with a score of 15 have spontaneous eye opening, be able to obey commands, and be oriented (Teasdale & Jennett, 1974). The patient was also required to have a telephone at home in order to be contacted at five to seven days post discharge.

Procedures

Patients in the study were asked to complete the RHDS on the day of discharge prior to leaving the hospital. The patients completed the scales in a written form and had no difficulties answering the questions. Members of the multidisciplinary healthcare team caring for the patient on the day of discharge were also asked to complete the scale. The bedside nurse, patient care facilitator, physician or advanced practice provider (physician assistant or advanced practice nurse), social worker, physical therapist, and occupational therapist were the members of team asked to complete the scale as appropriate. The patient was also contact via telephone at five to seven days after discharge in order to complete the RHDS again. This date and time of this phone call was arranged with the patient prior to discharge from the hospital.

Results

Thirty five RHDS's were completed at discharge during this feasibility study. These included ten scales from ten patients, ten scales from seven nurses, eight scales from seven physicians or advanced practice providers and seven scales from one patient care facilitator. None of the patients in the pilot study were seen by a physical therapist,

occupational therapist, or social worker on the day of discharge. The results from the study were evaluated using SPSS 20. The results on the individual questions were analyzed along with the results of the four subscales that included personal status, knowledge, coping ability, and expected support.

Tables 3, 4, 5, and 6 show the scores on each of the individual questions that compose each subscale. In this study, 10 scales were completed by 10 patients, 8 scales were completed by 7 physicians or advanced practice providers, 10 scales were completed by 7 nurses, and 7 scales were completed by 1 patient care facilitator. The number of patients, physicians/APP's, nurses, and patient care facilitators who completed the scales is reflected on the tables. In some instances, the same healthcare provider completed multiple scales. For example, the same patient care facilitator completed seven scales. However, the means are a reflection of all of the scales completed by those providers. When these means are compared, no clinically significant difference is found. The patients' and healthcare providers' scores on each question are similar and do not vary a clinically significant amount.

Table 3: Results from the Personal Status Subscale

Personal Status Subscale Item	Patient (n=10)		Physician/APP (n=7)		Nurse (n=7)		PCF (n=1)	
Physically ready to go home	M= 8.50	SD= 2.01	M= 9.13	SD= 0.84	M= 8.60	SD= 1.43	M= 9.71	SD= 0.49
Pain or discomfort today	M= 3.90	SD= 3.21	M= 0.87	SD= 1.13	M= 1.70	SD= 1.89	M= 0.00	SD= 0.00
Strength today	M= 6.80	SD= 2.53	M= 8.38	SD= 1.60	M= 7.60	SD= 1.71	M= 7.71	SD= 1.98
Energy today	M= 5.10	SD= 4.20	M= 7.38	SD= 2.39	M= 7.40	SD= 1.51	M= 7.00	SD= 1.29
Emotionally ready to go home	M= 8.50	SD= 2.32	M= 8.13	SD= 1.64	M= 7.70	SD= 3.23	M= 9.29	SD= 1.50
Physical ability to care for him/herself today	M= 7.80	SD= 2.04	M= 8.50	SD= 1.31	M= 8.00	SD= 1.56	M= 8.14	SD= 2.41

Table 4: Results from the Knowledge Subscale

Knowledge Subscale Item	Patient (n=10)		Physician/APP (n=7)		Nurse (n=7)		PCF (n=1)	
Know about caring for him/herself	M= 9.10	SD= 0.99	M= 8.75	SD= 1.04	M= 8.80	SD= 1.14	M= 9.71	SD= 0.49
Know about taking care of personal needs	M= 9.50	SD= 0.85	M= 8.88	SD= 1.13	M= 8.70	SD= 1.34	M= 10.00	SD= 0.00
Know about taking care of medical needs	M= 9.10	SD= 1.60	M= 8.25	SD= 1.39	M= 8.70	SD= 0.95	M= 9.86	SD= 0.38
Know about problems to watch for	M= 9.00	SD= 1.56	M= 8.50	SD= 1.60	M= 9.10	SD= 0.88	M= 10.00	SD= 0.00
Know about who and when to call	M= 9.60	SD= 0.70	M= 8.63	SD= 1.51	M= 9.30	SD= 0.82	M= 9.86	SD= 0.38
Know about restrictions	M= 8.50	SD= 1.78	M= 8.50	SD= 1.31	M= 9.00	SD= 0.82	M= 9.86	SD= 0.38
Know about what happens next	M= 8.60	SD= 1.84	M= 8.13	SD= 1.25	M= 9.10	SD= 1.20	M= 9.86	SD= 0.38
Know about services and information	M= 7.60	SD= 3.13	M= 7.00	SD= 2.20	M= 8.40	SD= 1.58	M= 9.71	SD= 0.49

Table 5: Results from the Coping Ability Subscale

Coping Ability Subscale Item	Patient (n=10)		Physician/APP (n=7)		Nurse (n=7)		PCF (n=1)	
Handle the demands of life	M= 8.50	SD= 1.65	M= 7.00	SD= 1.41	M= 7.40	SD= 1.90	M= 8.29	SD= 1.50
Perform his/her personal care	M= 8.70	SD= 1.64	M= 8.88	SD= 0.84	M= 8.00	SD= 1.56	M= 8.29	SD= 2.98
Perform medical treatments	M= 9.30	SD= 1.06	M= 8.25	SD= 1.28	M= 8.80	SD= 1.32	M= 8.57	SD= 1.90

Table 6: Results from the Expected Support Subscale

Expected Support Subscale Item	Patient (n=10)		Physician/APP (n=7)		Nurse (n=7)		PCF (n=1)	
Emotional support	M= 9.30	SD= 0.95	M= 8.13	SD= 1.55	M= 9.10	SD= 0.88	M= 10.00	SD= 0.00
Help with personal care	M= 8.70	SD= 1.95	M= 7.50	SD= 2.20	M= 8.70	SD= 1.06	M= 8.14	SD= 3.76
Help with household activities	M= 7.90	SD= 3.25	M= 7.38	SD= 2.00	M= 8.60	SD= 1.35	M= 8.57	SD= 3.78
Help with medical care	M= 9.00	SD= 1.41	M= 7.88	SD= 1.96	M= 8.90	SD= 0.88	M= 7.14	SD= 4.30

A one-way ANOVA was used to compare the results of the subscales among participants. Table 7 shows a comparison of the analysis of the four subscales for each of the pilot study participant types. There was no significant difference found in the scores on the subscales of personal status, coping ability, and expected support among the participants. A significant difference was found between the scores of the patient care facilitator (n=1) and the other healthcare providers on the knowledge subscale. This difference was statistically significant but did not have clinical meaning when the results

of the individual questions were compared. A Fisher LSD post hoc test was completed to analyze the differences between the participant types. Table 8 shows these results.

Table 7: A Comparison of Responses on the RHDS Subscales

Subscale	Points Possible	Patient (n=10)		Physician/APP (n=7)		Nurse (n=7)		PCF (n=1)		p-value
Personal Status	60	M= 40.60	SD= 11.96	M= 42.38	SD= 5.04	M= 41.00	SD= 7.83	M= 41.86	SD= 5.01	0.97
Knowledge	80	M= 71.00	SD= 9.19	M= 66.63	SD= 9.55	M= 71.10	SD= 7.02	M= 78.86	SD= 1.21	0.037
Coping Ability	30	M= 26.50	SD= 4.12	M= 24.13	SD= 2.9	M= 24.20	SD= 4.32	M= 25.14	SD= 5.7	0.599
Expected Support	40	M= 24.90	SD= 6.66	M= 30.88	SD= 7.1	M= 35.30	SD= 3.86	M= 33.86	SD= 11.3	0.592

Table 8: A Comparison of Responses in the Knowledge Subscale of the RHDS

Participants Compared	P-value
Patient-Physician/APP	0.242
Patient-Nurse	0.977
Patient-Patient Care Facilitator	0.047
Physician/APP-Nurse	0.231
Physician/APP-Patient Care Facilitator	0.005
Nurse-Patient Care Facilitator	0.050

Four of the ten patients completed the follow up RHDS at five to seven days after discharge. Due to the small number of scales completed, an analysis was not performed.

Discussion

The patient care facilitator had a statistically significant higher score than the other healthcare providers related to the patient’s knowledge regarding care after discharge. This is likely due to the fact that this provider has a greater focus on discharge than the other providers. The patient care facilitator spends a large amount of his/her time with the patient discussing discharge plans and ensuring that appropriate support and services are in place for the patient. In contrast, the physician or advanced practice provider and the nurse may not focus as much attention on these components of discharge and instead rely on the patient care facilitator for this. There is a potential bias regarding

the knowledge subscale by the patient care facilitators. This role involves discharge preparation and therefore these facilitators may score higher on this subscale due to this being a large focus of their job.

There was no statistically significant difference found between the score of the participants on the three subscales related to personal status, coping ability, and expected support. There was also no clinically significant difference found between the responses on the RHDS by the patients and healthcare providers for each of the individual questions. This suggests that there is appropriate and effective communication and similar perceptions between the patient and the healthcare team related to these three components. This is important as it illustrates the positive impact of the multidisciplinary team huddle that occurs each morning during the week. This huddle is composed of multiple disciplines and allows an opportunity for the healthcare providers to review each patient being care for by the team.

Of the ten patients in the study, only four answered the phone when called at five to seven days after discharge. However, of those who answered, two of them had multiple questions related to their care after discharge. These questions were related to medications prescribed at discharge and upcoming follow up appointments. These results suggest that discharge follow up phone calls by nurses would be effective in improving patient outcomes. A pilot study conducted with stroke or TIA patients regarding post discharge phone calls by a nurse or pharmacist to discuss medications improved the percentage of patients keeping follow up appointments (Sides et al., 2012). This study illustrates the impact that follow up interactions of healthcare providers following discharge can have on patient outcomes.

Implications for Future Research

Future research should include conducting research using the RHDS in a larger sample of patients at primary stroke care centers. This larger sample would allow for more generalizable results to patients in this setting. Research should also be conducted to explore incorporating the RHDS tool into the daily patient assessment. Positive feedback and its usefulness in assessing discharge were received from multiple providers. Therefore, if incorporated into the daily assessment by the healthcare team, it could be used as a tool to improve readiness for discharge throughout the course of the hospitalization.

Future research could also focus on obtaining follow up information from a greater percentage of patients. The same process was used to set up a date and time for follow up contact with each patient. However, only four of the ten patients answered the phone at the prearranged time. This could possibly be due to multiple reasons including buy-in to the pilot study by patients. Patients who answered the phone at five to seven days after discharge potentially had more interest in the study. Patients may also not have answered due to the fact that they were either staying with family members after discharge and not available at the number given to the investigator or they may have already returned to normal activities of daily life such as work. Possible future research could include conducting the survey at the patient's next follow up appointment.

Conclusion

In this small sample, the RHDS is a reliable tool in evaluating discharge readiness for patients discharged from a primary stroke center. When scores among patients,

nurses, physicians or advanced practice providers, and patient care facilitators are compared, no clinically meaningful difference was found. A statistically significant difference was found related to the subscale of knowledge. Patient care facilitators had significantly higher scores on this subscale than other healthcare providers which can be explained by the heavy emphasis on discharge by this provider. The lack of a clinically meaningful difference in the scores for each of the RHDS questions illustrate that the patients and providers have similar discharge perceptions at the stroke center. Future research should include incorporation of the scale into daily patient assessment and improving completion of the RHDS by patients after discharge.

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Conclusion

The capstone project provided a great deal of information about the discharge readiness of stroke patients at a primary stroke center. A literature review was conducted in order to identify the needs of this population of patients and their caregivers. Successes and challenges of maneuvering through the capstone process were then examined. Finally, a pilot study was conducted in order to examine the discharge readiness of ten patients at a primary stroke center. The perceptions of discharge readiness by the healthcare providers were also examined. The pilot study showed that the only statistically significant difference in perceptions regarding discharge readiness were among the patient care facilitator and the other participants regarding knowledge. However, no clinically meaningful significance was found between the patients and healthcare providers on any of the individual RHDS questions or subscales. These feasibility study results illustrate the effectiveness of the discharge program at the primary stroke center.

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