Implementation and Evaluation of Multiple Styles of Patient Education for Prevention of Stroke

By

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Abstract

The DNP student and clinical educator of a neuroscience unit at an acute care hospital identified the need of quality improvement in the stroke education that was being provided to the stroke patients. Stroke patients were being educated on their condition with paper handouts. Many patients identified their learning preference as audio or visual but only one method of stroke education was being provided. This project implemented an additional stroke education resource in the form of a video. This video was available to the patients and family on their hospital room television. The DNP student collected data to determine if there was an improvement in the stroke education based on the patient's knowledge after viewing the video. Results showed that prior to implementation, the patient's satisfaction with stroke education was 71% with an increase to 98% after implementing the video. The neuroscience department implemented the stroke education video to their regular practice after noting better patient understanding and satisfaction.

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Chapter 1: Introduction

Individuals who have suffered a stroke are vulnerable and at high risk of developing future complications. With effective education of stroke, medications and lifestyle management patients will be able to prevent subsequent vascular events. After spending more than four years providing care to patients who have suffered from having a stroke it was noted that there was an area of improvement needed in stroke education. It was evident that the family had to be heavily involved in the patients care as the patient usually acquired a deficit from the stroke. From the beginning of the admission until the end of stay, the nurse is educating the patient and family regarding the diagnosis, condition, risk factors, preventative measures, and treatment of stroke. It is very important that the patient and family understand this information, as it ensures their understanding of their health.

When a patient is admitted to the hospital, general practice includes assessment of the patients learning style by the admitting nurse. The patient can identify their learning style as visual, auditory, read/write, or kinesthetic (VARK, 2018). The VARK questionnaire is a short 16-question, simple inventory used to help people understand each other and assist them to learn more effectively in many situations (VARK, 2018). The reliability estimates for VARK were visual 0.85, auditory 0.82, reading/write 0.84 and kinesthetic 0.77 (VARK, 2018). By identifying the learning style, there is a higher chance the individual will learn the material that is presented. When individuals make changes to their learning based on the results of the VARK questionnaire, their learning is enhanced because they utilize strategies that match up with their learning preference (VARK, 2018). After identifying the learning preference, it is easier to construct an educational plan for the patient's best understanding of stroke. The current education process of stroke patients in the neuroscience department is to provide a folder that has

handouts of stroke information. This addressed the patients who state their learning style as reading or writing. Patients who have suffered from stroke acquire deficits that could affect their vision, speech and motor. These deficits may become barriers to the patients learning which is why handouts may not be the appropriate method of education. The handouts have minimal pictures with written information about ischemic and hemorrhagic stroke. The current stroke education only addresses reading or writing learning styles and lacks to address the individuals that identify their learning style as visual, auditory or kinesthetic. Since there are minimal pictures, it does not seem to be the best source of educating an individual who identifies visual as a learning style. This becomes a problem as the neurosciences department is using the same method of education regardless of their learning preference. Assessing the patient's learning preference is appropriate but the information does not get used if only one method of education is available for the patients. The scholarly project was to create a new visual/auditory method of stroke education and assessing whether individuals with visual or auditory learning preferences are being met. The neurosciences department would also be able to identify if introducing a new visual method of stroke education will be beneficial to the patients.

Objectives include implementation of stroke education video in neurosciences unit at hospital by February 2019. Another objective was to evaluate 30 stroke patients after they have viewed stroke video and 10 stroke patients that only received former handout education by March 8th, 2019. Next objective was to complete scholarly project paper including gathering data and evaluations of stroke video education by March 15th, 2019. Last was to disseminate the project to Bradley University by early April 2019.

Background and Significance

The focus of the project was to implement, evaluate and promote education among stroke patients, honoring individual learning styles. The educational goal was for stroke patients and their families to have a better understanding of stroke before discharge. By educating patients and families based on their learning preferences, they will have a better understanding of stroke. The patients' learning was evaluated by utilizing the stroke education evaluation form developed for this project (Appendix B). The primary concept of this project was focused on stroke education promotion by implementing an audiovisual program available on the intranet.

Stroke education was identified as an issue at the medical center's Neurosciences department due to the diversity of patients learning preferences but only having one method available to provide for post-stroke education. To maintain stroke accreditation at the hospital, stroke education must be done with the patient and their family member or caretakers (Brigham and Women's Hospital, 2018).

According to Massachusetts law, each patient admitted to the hospital with a stroke must be educated on the causes, complications, and risk of stroke (Massachusetts Department of Public Health, 2018). Hospital or community-based prevention should continue to be a required activity in any stroke center designation program (Massachusetts Department of Public Health, 2018). Massachusetts Department of Public Health actively works with primary stroke service hospitals to ensure regulatory compliance and follow-up with hospitals that are cited for non-compliance with community education (Massachusetts Department of Public Health, 2018). Community education of stroke patients was done by educating patients and family while they were in the hospital. The patients were also encouraged to take the educational handouts home with them. Providing stroke education to patients is mandated for reimbursement purposes and

maintaining stroke accreditation in acute care facilities. The method of education at the medical center is done by each patient's nurse, who provides a folder that has written information regarding the type of stroke the patient had, hemorrhagic versus ischemic. The nurse has a discussion with the patient and family while they review the folder together.

Upon discussion with the clinical educator of the neuroscience intermediate unit and due to the recent stroke accreditation audit by Joint Commission, it became clear that it would be beneficial to have another method of education available to patients. Although the current method of education was acceptable by the Joint Commission to continue with the stroke accreditation, the clinical educator wanted to implement another method of education since each individual learns in a different way. Since the patient's learning style is evaluated with the VARK assessment, the information was not being used appropriately as there was only one method of stroke education available.

The hospital has maintained compliance without issues, but the staff and clinical educator noted an area for improvement in the practice. The issue/problem was that there was only one method of stroke education available in the neuroscience department, which was to provide the patient with handouts regarding stroke, no matter what their learning style. The patients have acquired an understanding of stroke through extensive verbal stroke education that was provided by doctors and nurses. By implementing an additional and tailored method of stroke education, it would enhance the learning process of the patients/caregivers and education process done by the nurses. This would also help alleviate the nurses' burden of time spent at providing stroke education, which usually takes fifteen to thirty minutes depending on the patient. The overall goal of educating a patient should be that the information is consistent as well as understandable for the patient (Mitchell, Bowen, Tyson, Butterfint, Conroy, 2017).

For this project, patients' learning styles continued to be evaluated and information was provided for some patients using a video in addition to the normal handouts in the folder. Neuroscience nurses discussed all educational material with their patients. The staff and clinical educator agreed that information can be consistent if it is provided to the patient by presenting a video. Since this is a form of cognitive education, providing the same material/video to be shown to the stroke patients would lead to the same information being presented therefore reinforcement of the education. By providing the patients with the same presentation and information, consistent, accurate education was provided as well as reinforcement of education (Mitchell, Bowen, Tyson, Butterfint, Conroy, 2017).

Based on the clinical educator's eighteen years of neuroscience experience, the method that was determined as a good addition to the stroke education was constructing a visual presentation with audio. By adding a visual presentation, the patients had the option of using both handouts and video methods of education for the best understanding of stroke. The video allowed the patients to focus on what stroke is and how to live their life after having a stroke rather than just reading handouts about stroke information. The video presentation was available on the intranet, which is accessible from any computer in the hospital or television in the patients' room. This was easily accessible by the patients and their caregivers to view at any time of the day and as frequently as they wish to view it.

After the patient's learning style was identified and presented with the video stroke education, the DNP student evaluated the understanding of the patients' learning. By evaluating the patient, the DNP student was able to determine if implementation of this project improved the patient's understanding of stroke. Evaluation was completed by using a tool created by the DNP student, the Stroke Education Evaluation Form (Appendix B). The involvement of the

neurosciences department was essential in implementing this project. The neuroscience nurses were trained by the DNP student on how to access and present the video stroke education to the patients. The audiovisual presentation was piloted, and data was collected during a month's period to determine if the addition of the education method was beneficial before it was added to the standard practice of stroke education.

Problem Statement

Current stroke education consists of an educational folder that includes information about what type of stroke the patient had, how to prevent stroke, risk factors, lifestyle management, emotional changes and healthy diet (Brigham and Women's Hospital, 2018). The concern was that each patient learns differently yet the same folder was being provided to each stroke patient. Some individuals learn by listening while others learn by demonstration.

The problem was that currently there was only one method of teaching stroke patients. This was a problem because it did not address each learning style method. Current method of evaluation after providing stroke education was asking the patient if he or she understood the material, and if he or she verbalized understanding the education was complete. Otherwise the nurse would continue to have a discussion with the patient to explain stroke and future lifestyle management. The proper educational plan would include evaluation of the patient's learning style then determining which style of education would best fit the patient for an outcome of best understanding. This allows the patient to receive education tailored to their learning style and need. Once these factors are determined, the plan to educate the patient on their condition and how to live with their new changes will be beneficial. For example, a patient that is aphasic, can benefit from the visual/auditory presentation as well as providing the handouts for review of stroke.

Project Aim

The overall aim was to provide an additional, cost-effective method of stroke education for patients with either receptive aphasia or those who identify their learning preference as visual or auditory, plus their families. By evaluating this specific population, the student aimed to determine if an additional visual method of stroke education was beneficial to stroke patients.

It will be important to target this population because approximately one-third of people who have a stroke experience aphasia (Brady, Kelly, Godwin, Enderby & Campbell, 2016). Receptive aphasia is an acquired language impairment after having brain damage affecting language modalities such as expression and understanding of speech, reading and writing (Brady, Kelly, Godwin, Enderby, Campbell, 2016). The goal of this project was to educate stroke patients and establish that they have acquired an understanding of what stroke is, the risk factors, preventive measures and lifestyle changes.

The method was to establish a new system of stroke education that addresses patients' learning styles. An objective includes the nurse assessed the patient and caregivers' learning style as visual, audio, reading or demonstration during the first 24 hours of admission. Another objective was the nurse provided the patient with stroke education tailored to their learning style, audiovisual presentation to those patients that identify learning style as audio or visual during the patient's admission. Patients that identified their learning style as reading received the educational stroke handouts from the nurse during the patient's admission. If the patient has acquired a deficit such as aphasia from the stroke, the patient received the visual presentation as well as the handouts. Once the patient completes the visual presentation and review of handouts, the nurse providing care for the patient or the DNP student presented the patient with an evaluation of the presentation.

The goal of the evaluation was to determine the effectiveness of the presentation regarding the patient's understanding of stroke. There was also a comparison with the patients who did not receive the visual presentation. The patients that only received the reading material also completed a simple questionnaire that helped to assess if the patients were learning in that manner or if they should also be viewing the visual presentation. If there was evidence that the patients that identified their learning style as reading do not answer stroke-related questions appropriately, they were recommended to also receive the visual presentation. In the end, if the project provided evidence that the visual presentation provided stroke patients with an adequate amount of learning it will be added to the standard practice.

Clinical Question

The goal of this project was to improve stroke education so that it was more effective for the stroke population. Therefore, the outcome or dependent variable for this project is improved and effective stroke education. The determined PICOT question for this research project is: In stroke patients and their caregivers (P), how does a visual presentation with audio and brochures specific to the patient's type of stroke (hemorrhagic/ischemic) (I) compared to providing only educational brochures (C) affect stroke education learning (O) within a four-week period (T)?

Presentation of stroke education was evaluated with the post-education survey for patients and caregivers that received the visual presentation as well as the patients that received just the stroke handouts. By assessing both types of education, the DNP student was able to determine the effectiveness of the new visual presentation when compared to the use of handouts alone.

Congruence of Organization's Strategic Plan

The organizational mission states that they provide comprehensive care for patients with all cerebrovascular conditions including stroke (BWH, 2018). The goal of the organization department of neurology includes providing tailored care to the individual needs of each patient (BWH, 2018). The multidisciplinary team in the stroke and cerebrovascular disease services includes emergency physicians, neurocritical care physicians, neurosurgeons, vascular surgeons, radiologists, cardiologists, nurses and rehabilitation specialists (BWH, 2018). The center also provides services during all phases of care for patients with stroke which includes medical and educational needs (BWH, 2018). By implementing this project, it had the potential to benefit the neurology nurses with additional resources for discharge teaching. Each individual learns in a different manner. The admitting nurse assesses the patients' preferred method of learning. Currently, the options on the admission flowsheet includes "Listening, Reading, Demonstration, Pictures/Video". For those stroke patients who state reading is their preferred method of learning, the current stroke education folder would be sufficient. But for individuals that state they prefer listening, demonstration, pictures or videos would require an alternate method. By implementing this project an alternate method was available for the patients and their family.

The hospital's vision statement includes that they aspire to transform the future of healthcare, through science, education and compassionate care, locally and globally (BWH, 2018). The mission statement includes that the hospital is dedicated to serving the needs of our local and global community, providing the highest quality health care to patients and their families, expanding the boundaries of medicine through research, educating the next generation of health care professionals (BWH, 2018). The mission and vision are connected to this project as Brigham and Women's Hospital considers educating their patients a priority. It will be

important to ensure that stroke patients are educated on their condition to prevent future complications and maintenance of their life. Evaluating the current stroke education practice and effectiveness of the new method of stroke education will tell if there is an improvement in patient learning.

Review of Literature

Multiple search engines were used to search three categories specific to stroke education. The first topic included patient and family education. The second included teaching of patients after having a hemorrhagic stroke. The third was teaching of ischemic stroke. Unfortunately, most of the results were unrelated to the PICOT question. Search was started again this time focusing on patient education, caregiver education, stroke teaching, and stroke/cerebrovascular accident education. This caused a delay in the project but there were results that were directly related to the PICOT question. The search was later expanded by further looking into learning styles, specifically the VARK questionnaire, individualized learning and aphasia since it is an identified barrier to learning (Brady, Kelly, Godwin, Enderby, Campbell, 2016).

The search began on Google scholar but also utilized PubMed, EBSCOhost and Cochrane to complete the search process. Keywords that were used included “patient and family education nursing”, “stroke teaching”, and “stroke education”. Many obstacles occurred during the search process. Most of the articles found were too old, ranging from 1980s-1990s. Limits were set so that only the articles from the last five years would appear.

The search for “patient and family education nursing” in the mentioned databases revealed eight articles. The search for “stroke teaching” revealed six articles. The search for “stroke education” revealed nine articles. Review of the twenty-three articles provided beneficial

information for the research and allowed the student to identify gaps in research that this project could establish.

Through the research, substantial information was gathered to aid in the implementation of this project. The research included a qualitative study, multiple literature reviews and research reviews based on stroke patients/caregivers and education. From the information gathered, there is recent evidence that can be used to conduct the project and create the improvements in stroke education needed on the Neurosciences unit.

Brady, Kelly, Godwin, Enderby and Campbell conducted a study to determine if speech and language therapy benefits aphasia (2016). They concluded that high intensity, high dose and over a longer period of therapy is beneficial, and has improved functional communication, reading, writing, and expressive language (Brady, Kelly, Godwin, Enderby, Campbell, 2016). The time commitment to achieve this benefit takes approximately fifteen hours of therapy a week (Brady, Kelly, Godwin, Enderby, Campbell, 2016). This type of patient result takes time which is not generally witnessed in acute stroke care, therefore the type of education provided to the patient will have to be done with these deficits in mind. By providing a stroke education method that an individual with aphasia, difficulty reading, and writing can comprehend will lead to better patient outcomes. These outcomes will be measured and are discussed in chapter 2.

Vloothuis, Mulder, Veerbeek, Konignenbelt, Visser-Meily, Ket, Kwakkel and van Wegen conducted a study to determine if caregiver-mediated exercises improve functional ability and health-related quality of life in people with stroke. The study concluded that caregiver-mediated exercises significantly improved the secondary outcomes of standing balance, quality of life and basic activities of daily living (Vloothuis, Mulder, Veerbeek, Konignenbelt, et al., 2016). Forster, Brown, Smith, House, Knapp, Wright and Young also conducted research that evaluated the

effectiveness of information provision strategies in improving the outcome for stroke patients and their caregivers (Forster, Brown, Smith, House, et al., 2012). The studies mention that stroke survivors and caregivers do not feel like they have received enough stroke education and feel uneasy to provide care at home. The researchers concluded that there was a significant effect in favor of implementing interventions to educate patients and caregivers that led to improved patient knowledge, caregiver knowledge, patient satisfaction, and decreasing patient depression rate (Forster, Brown, Smith, House, et al., 2012). Cameron assessed the education that was provided by nurses in acute care after a patient has a stroke (2013). Cameron's research suggested that a nurse must be able to appropriately educate the patient and caregivers due to the patient's experience, physical, mental, and emotional challenges after a stroke (Cameron, 2013). This implementation will support the nurses' educational process and provide an additional method that may be more fitting to the patient and caregivers learning style. Cameron also conducted a qualitative study that showed the caregivers' needs for support and they are the individuals most suited to provide support for the stroke patients once they are home (Cameron, 2012).

Along with having the stroke, the patient and caregivers experience many emotions and challenges that will also need support. An article by Knapp, Alexia Campbell Burton, Holmes, Murray, Gillespie, Lightbody, Watkins, Chun and Lewis conducted a research study to assess interventions that will help treat anxiety after stroke. Results showed that a reduction in anxiety occurred after a three-month participation in relaxation CD (Knapp, Alexia Campbell Burton, Holmes, Murray, et al., 2017). Providing these recommendations to the patients and caregivers will aide them with their anxiety. Wu, Kutlubaey, Chun, Cowey, Pollock, Macleon, Dennis, Keane, Sharpe, and Mead conducted a study that assessed post stroke-fatigue (2015). Due to the

change in life-style, quality of life, disability and dependency, patients experience fatigue after having a stroke (Wu, Kutlubaey, Chun, Cower, et al., 2015). Recognizing this and educating the patients and caregivers will be beneficial. Fryer, Luker, McDonnell, and Hillier conducted a search to assess self-management programs for quality of life in people with stroke patients (2016). These programs offer stroke patients a guide to recovery which includes skills training and encouraging them to take an active part in their health (Fryer, Luker, McDonnell, Hillier, 2016). The implementation of this project believes to alleviate stressors and challenges by providing good self-management skills.

Part of discharging a patient includes educating them of risk factors, self-management and new deficits. A study by Lager, Mistri, Khunti, Haunton, Sett and Wilson studied modifiable risk factors that affect patients' potential of having another stroke (2014). Stroke patients are a risk for future strokes and cardiovascular complications which is why it is imperative that they have control of their blood pressure (Lager, Mistri, Khunti, Haunton, 2014). Including blood pressure management as a part of the education will be essential. Mitchell, Bowen, Tyson, Butterfint and Conroy conducted a search on dysarthria related to stroke (2017). Since brain damage that occurs during a stroke can cause deficits that could potentially effect speech, it is extremely important to provide knowledge and support to the patients and caregivers (Mitchell, Bowen, Tyson, Butterfint, et al., 2017). Following a plan provided by speech therapists will be essential in dysarthria stroke patients for positive results (Mitchell, Bowen, Tyson, Butterfint, et al., 2017). Langhorne and Baylan conducted a search on early discharge to patients with acute stroke given that they are provided with support and services (2017). Results showed that an early support discharge showed a reduction in the length of hospital stay and small improvements in activities of daily living (Langhorne & Baylan, 2017). Given that the patients

are provided with support from multidisciplinary teams at an early stage in their hospitalization as well as outpatient, it is likely there will be improvements in their management of their condition (Langhorne & Baylan, 2017).

The literature found supports that stroke patients endure changes such as deficits which effects their learning needs and lifestyle. The research also alerted the student that patients and caregivers do not feel like they have received enough stroke education and feel uneasy to provide care at home. Literature showed that high intensity therapy over a longer period will be beneficial in improvement from the deficits but in acute care the patients have a short stay in which they should be evaluated and educated on their condition. This information proves that there is a gap in the current practice of stroke education. This evidence shows that implementation of the stroke video education will help the patients and family easily learn about stroke and prepare them make lifestyle changes. The project implementation is evidence-based as it shows that the vulnerable stroke population needs support and proper education.

Theoretical or Conceptual Framework

A conceptual framework provided structure to the implementation of the project. Moran, Burson and Conrad state that "a conceptual framework is a group of concepts that are broadly defined and systematically organized to provide a focus, a rationale, and a tool for the integration and interpretation of information" (2016, p.127). The Donabedian framework evaluates the structure, process, and outcome of nurse practitioner service (Gardner, Gardner, O'Connell, 2014). The Donabedian framework is a valuable and validated style to evaluate the safety and quality of a service innovation (Gardner, Gardner, O'Connell, 2014). This framework will be fitting to the project as the Donabedian framework lays the foundation for safe, effective and patient-centered clinical care (Gardner, Gardner, O'Connell, 2014). The Donabedian framework

includes three sections: structure, process and outcome (Gardner, Gardner, O'Connell, 2014). The project structure is the setting the project will be implemented in and who will be involved in the project (Gardner, Gardner, O'Connell, 2014). The project process is what will be done and how it will be delivered (Gardner, Gardner, O'Connell, 2014). The project outcome is what will be measured, reviewed, or assessed (Gardner, Gardner, O'Connell, 2014).

Structure	**Process**	**Outcome**
Brigham and Women's Hospital Neurosciences department	New stroke education presentation broadcasted on Intranet	Stroke patients that identified visual and auditory learning preferences receive visual stroke education and handouts.
Project chairperson, mentor, DNP student	Training nurses to navigate the stroke education	Stroke patients that identified reading/writing as learning preference receive handouts only.
Neurosciences staff nurses Stroke patients and caregivers	Assessing learning style at time of admission and presenting stroke education to patients and caregivers	Evaluation of patient's understanding of stroke by completing Stroke Education Evaluation Form (Appendix B).

Chapter 2: Methodology

Recently, the DNP student provided care to a visually impaired stroke patient that had endured a right middle cerebral artery stroke. During stroke education, the DNP student was able to utilize the stroke folder that is currently used for education. The DNP student sat with the patient and explained to the patient what stroke is, how it had affected the patient and how the patient will live have to live her life with stroke. This is a practical example of how written documents that teach patient about their stroke are not efficient in all cases. If an audio educational program had been available such as a video, then it would have been beneficial to both the patient and nurse.

Needs Assessment

This occurrence led the DNP student to again realize that there is a need for a new stroke education program that addresses each type of learning method. The impact of implementing this project could lead to patients and caregivers with a better understanding of stroke and how to manage their health. If the patients are able to manage their health, they will be able to prevent complications and future strokes. The SWOT analysis helps to evaluate the project idea by identifying strengths, weaknesses, opportunities and threats (Moran, Burson, Conrad, 2016) One strength of this project is the ability to educate patients with various learning styles. Since nurses do not have to be present while the patient views the video presentation, this is also a strength, as it relieves the nurse and allow the nurse to complete other tasks. The nurse still had to assess and evaluate that the patient gained understanding of stroke which may be viewed as a weakness. If the patient does not have an understanding of stroke after viewing the presentation the nurse either had a discussion or utilized a different method of completing the stroke education, which again may be viewed as a weakness. Opportunities to provide multiple methods of stroke

education will be available to patients and their caregivers by implementing this project. Nurses also had opportunities to identify which method of teaching was beneficial for their patient and caregiver. Threats included potential power outage or loss of access to intranet which may cause the program to be unavailable. In this case, the nurse still utilized the written material to teach the patient as it is required to provide stroke education.

Project Design

This project is designed to provide quality improvement. Quality improvement is defined as the combined and unceasing efforts of healthcare professional, patients and their families, researchers, payers, planners and educators to make the changes that will lead to better patient outcomes, better system performance and better professional development (Lucey, 2013). Results from this project evaluated if there was an improvement in patient education, patient satisfaction and healthcare professional consistency in educating clear material to patients. The project would be considered unsuccessful if it does not provide an improvement in the method of stroke education. In this case, the project will either have to be reestablished/reinvented or revert to the former method of stroke education.

Setting

The project took place in the neurosciences department. The neurosciences department has 46 beds available to patients that are admitted under the neurology or neurosurgery services. This was a good setting for the project as the stroke patients that are treated in the hospital are usually admitted in the neurosciences department. The only time they are not admitted in the neurosciences department is if there is an unavailability of beds. This setting was also effective as the neurosciences department has neurology/stroke-trained nurses. These nurses have completed training and received NIH Stroke certification. The nurses have gained immense

experience with neurology specific patients and their conditions. Neurology doctors and residents also frequent their rounds in this department. Clinical educators and managers are all very knowledgeable of the neuroscience's patient conditions.

Population/Sample

The 46 beds of the neurosciences department are occupied by patients who are admitted to the neurology or neurosurgery services. These patients are admitted for various neurological conditions such as stroke, seizures, brain tumors, brain surgery, and spinal surgery. The patients that are admitted with stroke or have had a stroke during their hospital admission were the interest of this project. The goal was to evaluate at least 30 stroke patients. The criteria that the patient had to meet was to have a hospital admission for stroke in the neurosciences department and identify their learning preference as audio or visual. Patients that identified their learning preference as reading were evaluated to determine if the reading materials that were being provided prior to implementation of the project were sufficiently educating the stroke patients. The evaluation was done by using the same assessment tool that was be used for the stroke patients that received the audio-visual stroke education.

Tools

The patients were assessed prior to implementation to obtain data of the patients understanding of stroke prior to making the change. After the implementation, the patients were assessed to determine if this project led to patient understanding of stroke. It was important to assess the patients after they received the stroke education as it showed if there were any changes in the patient's understanding directly related to the visual stroke education. The patients who identified their learning style as visual or audio received the new educational program (video and handouts) whereas those that stated their learning style was reading received the old educational

program that entails of a stroke educational handout. The handout was the prior to implementation method of stroke education. The goal was that the sample size identified previously included both patients that view the visual educational program with the handouts and patients that only use the handouts. These individuals were assessed with a stroke education evaluation form that the DNP student had created. The data collected from the evaluation form was very important to determine the validity of the project. The Stroke Education Evaluation Form is provided in Appendix B. Other tools included creation of a flyer to distribute in the neurosciences unit to neurosciences nurses to educate them of how to assign the appropriate stroke videos to the stroke patients. The flyer can be found in Appendix E.

Project Plan

The first step was to coordinate with the professional development manager and nursing informatic to view the current database of educational videos approved by Brigham and Women's Hospital. Within this database was almost 3 hours' worth of stroke related content which was disorganized, in random order and not being used by the Neurosciences department. The DNP student spent time reviewing the content available and selecting the videos that matched the content in the handouts which had been previously approved by the joint commission.

The content of visual stroke education was selected by the DNP student. After selecting the content for the video, the DNP student shared it with the professional development manager and nursing informatic to get approval. Once the professional development manager and nursing informatic agreed that the content of the selected videos and stroke education handouts matched then the selected videos were conjoined to make one video. The DNP student was mindful of creating a video that was about ischemic stroke, hemorrhagic stroke and transient ischemic

stroke as those are the three types of strokes that are seen in the neurosciences department. The DNP student communicated with the nursing informatic to give a list of the videos that would be included in each of the three videos. The nursing informatic conjoined the videos and placed them on the patient intranet. The content of the video included presentation of stroke verbally and visually as it included pictures of anatomic changes that occurred prior to stroke, during and after having a stroke. The video also educated the patient on risk factors, stroke related information, medications like anticoagulants, lifestyle management after having a stroke and support for patient and family after having a stroke. This video was chosen due to the lack of availability of visual stroke education at Brigham and Women's Hospital. Patient interactions and discussion with project mentor led to the realization for the need of this intervention.

The second step included educating the neuroscience nurses on how to assign the appropriate stroke video to the stroke patients. The DNP student created a pamphlet with instructions that was displayed around the nurses' station and emailed to the neurosciences unit to help the nurses learn how to assign the educational video. The DNP student also met with the nurses one on one to teach them verbally, demonstrate and walk them through assigning the stroke video. The professional development manager and nursing informatic were also available to assist the neuroscience nurses to navigate and assign the stroke videos. This intervention is needed as the neuroscience nurses are directly involved in providing stroke education to their stroke patients and they need to be educated on the video before it is shown to patients. The third step included neuroscience nurses presenting the visual stroke education to patients that identified visual and audio as the preferred learning style.

The fourth step was to evaluate the effectiveness of both methods of stroke education, visual and handouts. The DNP student met with 10 stroke patients that haven't received the

stroke videos and evaluated their understanding of stroke just based on the stroke handouts. The DNP student also met with 30 stroke patients that have received both the video and handouts or just the stroke video. The DNP student utilized the stroke education evaluation form (Appendix B) when meeting with the stroke patients to evaluate their learning. This provided data on the effectiveness of stroke education with the stroke video. The DNP student provided the stroke patients with the stroke education evaluation form. The DNP student analyzed the data with the project mentor on the effectiveness of the stroke education. The stroke education evaluation form was used to measure the success of the visual stroke education. If data did not show that the visual stroke education was an effective method of stroke education, the DNP student and project mentor would brainstorm how it can be modified to be more effective.

As mentioned previously, the DNP student provided the stroke patients with the evaluation form which is going to be the measurement as well as the data. The data that was collected, was evaluated by the DNP student with the guidance of the project mentor. The evaluation form was filled out anonymously to protect patient's privacy and avoid HIPAA violation. The goal was to have data from both types of education, visual and handouts to be able to collect a good quality of data. Data collection included at least 30 stroke patients within a two months period. If more than 30 stroke patients were evaluated the data would be stronger but it should be completed in a maximum of two months period.

The patients' understanding of the stroke education (including understanding of diagnosis, associated medications, risk factors, lifestyle management) was evaluated before and after the video for those receiving the video intervention, and only after the normal handout discussion for those not receiving the video. Patients learning was evaluated by completing the Stroke Education Evaluation Form after completing the stroke education. If the patient's family

was involved in the care of the patient, they also received the same stroke education and evaluation as their understanding of stroke is equally important. Including the patients' family was important as they would be able to identify any risks or complications the patient may endure after leaving acute stroke care (Langhorne & Baylon, 2017). Consistent and reliable stroke education will be the formal education for the neuroscience department. Formal education is consciously and deliberately pre-planned, organized and given for the modification of behavior with a particular end in view (Parihar, 2014). The implementation of the additional stroke education will be pre-planned, organized and used to provide better outcomes for stroke patients.

The neuroscience nurse was also able to assign the stroke patients the appropriate video which prompted the patient to view every time they started their television. After this method of teaching was done, the nurse providing care for the patient reviewed whether the patient and caregivers had any questions or concerns. A short questionnaire was provided to the patient and caregiver to assess their understanding of stroke and satisfaction of the presentation. The nurse can use the information provided to complete or reinforce teaching as needed. This helped to determine if the visual presentation was beneficial to their learning of stroke. The audiovisual presentation was piloted, and data was collected during a month's period to determine if this method was beneficial before it was added to the standard practice of stroke education.

This project had the ability of maintaining sustainability as each stroke patient viewed the same video and content if they identified visual or audio as their preferred learning style. This was the strength of this project as the stroke education was not altered in different style teaching methods of individuals. The message remained the same therefore it was not necessary to measure sustainability once the implementation was in place. The project's vision was started in

fall of 2017. Many changes had been made through the process based on the project need and research. The project timeline was expected to be completed by March 2019. The project timeline is provided in Appendix D.

Data Analysis

Data that was collected from the stroke education evaluation form (Appendix B) after a patient received stroke education. The data collected was used to analyze the effectiveness of the educational program. Good quality data would include equal amounts of data from visual/handout education as well as handout education by itself. The data was collected by the DNP student for this project. The stroke education evaluation form was also given to the patient to complete if they identify their learning style as reading after they received the stroke handouts and reviewed them. The completed stroke education evaluation form was used as the data to determine the effectiveness of the visual stroke education when compared with the stroke handouts. The DNP student gathered the data and collaborated with the project mentor to review the data. Since the project mentor also reviewed the raw data, it ensured a double check to reduce mistakes. The DNP student then transcribed a narrative based on the data received. Quantitative methods were used to measure the data gathered. Each question from the stroke education evaluation form was evaluated on its own. This allowed evaluation of each criterion, for example, how many participants from the sample viewed the visual stroke education. Once the project was completed, further evaluation of each patient will continue to be done by the neuroscience nurses. The visual stroke education will continue to be used if determined to be appropriate for the patient and their learning style. The neuroscience nurse providing care for the stroke patient identified which learning style is best for the patient and determined which method of stroke education will be best for the patient's learning. The neuroscience nurse assigned the

stroke video and checked if the patient had understanding of stroke after viewing the video. Whether there is an understanding or not, the neuroscience nurse will record that in the EPIC education documentation. Within the documentation screen, stroke education will be selected, followed by the person that was educated (e.g., patient, spouse/family), method used to educate (e.g., handout, video), the patient's eagerness to learn (e.g., acceptance, refusal), and the outcome of the education (e.g., verbalizes understanding, no evidence of learning, will need reinforcement). The education was modified based on the patients needs as determined by the neurosciences nurse. The neurosciences nurse was not trained on evaluation of the education and modifying as needed since the neuroscience nurse is already using this technique as a part of the care provided in this unit.

Ethical Issues

Permission to conduct research must be obtained from the heads of institutions or units concerned and from the participants themselves, all of whom must be fully informed about what is involved (Bell & Waters, 2014). For this project, the neurosciences department gave permission to implement this project as it will alter their current stroke education. There may be an ethical issue if permission was not granted. The neurosciences nurse director and professional development manager were notified and agreeable to the intent of completing this project. They recognized the need for this project and how it benefits the stroke patients, their caregivers and neurosciences nurses providing care. The patient's that completed the evaluation form will be notified that the information they provide was used anonymously as data to determine the efficiency of the stroke education. An individual is considered to be vulnerable if they are going through physiological symptoms, emotional distress, persuasion or burden (Baumhover & May,

2015). The vulnerable population in this project was considered to be the stroke patients and their caregivers.

Institutional Review Board

An application was submitted to Bradley University's CUHSR. The application was later pulled and deferred per recommendations of project mentor as the project's focus to implement an additional resource for stroke education and not manipulating the current method. An application for Brigham and Women's Hospital was not placed due to stroke education practice already being in place, this project just provided an addition to the education and patients involved were not identified.

Chapter 3: Organizational Assessment and Cost Effectiveness Analysis

Organization Assessment

Brigham and Women's Hospital Neuroscience Department clinical nurse educator had expressed that there was a need for improvement in the stroke education. There is hope that this project will be able to meet the expectations of the neurosciences department as well as my project mentor. There is readiness for change as the project idea was verbalized by the neuroscience department clinical educator. When the project was shared with the nursing director, professional development manager, nursing informatic and several of the neuroscience nurses the feedback was positive and verbalized how this project would enhance the stroke education. Anticipated barriers to implementation may include technical issues with launching the presentation on the intranet. Another barrier may include meeting the expectations of Joint Commission's requirements, as the new educational program must fulfill all the requirements of stroke education in the same manner the existing previous method did. These barriers should be worked through as they may pose as a challenge to the project but not necessarily a complete obstruction to completion. Similar to the barriers would be the unintended consequences. Potential problems may include stroke patients not being receptive of the new education program or lack of support from neurosciences department. Without the support of the neurosciences departments, implementation of the project may be very difficult as well as unsuccessful. Interprofessional collaboration occurs when two or more professions work together to achieve common goals and is used for solving a variety of problems and complex issues (Green & Johnson, 2015). As mentioned, neurosciences nurses, professional development manager, nursing informatic and nursing director of neuroscience department were involved in the interprofessional collaboration of this project. Each member was essential to the project's

success as they were involved in providing data and support. Collaborating provides organizations, institutions, or professions to achieve more than they can on their own (Green & Johnson, 2015).

Cost Factors

Majority of the resources to conduct this project are available and in place. Neurosciences nurses, professional development manager and nurse director are already on board with this project. The nursing informatics team for Brigham and Women's Hospital is available to help and provide access to the vast database of educational videos approved by Brigham and Women's Hospital. These human resources were budgeted for a four months period as the expected time of conducting the project will not be longer than four months. Basic supplies such as handouts will be created which will estimate around $100. Operational costs and Capital costs weren't determined as they are already in place and not affected by this project. When patients are admitted to a hospital with an ischemic stroke, the hospital charges around $15,180 if it is the primary diagnosis (Wang, Zhang, Ayala, Dunet, Fang, George, 2014). When patients are admitted to a hospital with a hemorrhagic stroke, the hospital charges around $36,176 if it is a primary diagnosis (Wang, Zhang, Ayala, Dunet, Fang, George, 2014). This was used in the budget table to calculate revenue, though it will differ as the amount on the budget table is per patient. The budget table accounts its revenue only for one patient which leads to the revenue to be less than the expenses. This will be different depending on the number of patients that receive stroke education. The Budget Table is available in Appendix C.

Chapter 4: Results

Analysis of Implementation Process and Outcome Data

As planned, the implementation phase began with meeting and coordination with the professional development manager and nursing informatic. This included meeting one on one to help the DNP student get a better understanding of the available resources within Brigham and Women's Hospital. This included discovery of a database from Elsevier that includes educational videos of various diagnosis that has been approved by Brigham and Women's Hospital but not currently being utilized in patient care. As planned by the DNP student, nursing informatic and professional development manager, the student was able to find appropriate material from the database that addressed the stroke patients learning needs.

The videos had over three hours of stroke material. Though all useful information, the stroke patient will not be able to commit to sitting down to watch such lengthy material and will likely not retain that much information. When discussed with the professional development manager, it was determined that it would be appropriate to go back and analyze the information in the stroke handouts. Noting the different topics that were discussed in the stroke handouts, helped the DNP student base the search of the video content and refine to target the information provided to the stroke patients. It was also important to be sure that each type of stroke was addressed in the video such as ischemic, hemorrhagic and transient ischemic attack. To avoid confusing the patient three videos were created, one that focused on the diagnosis of ischemic stroke, another for hemorrhagic stroke and third for transient ischemic attack. This would help the stroke patients learn exclusively about the type of stroke they experienced. This would also make it easier for the neuroscience nurses when they are assigning video educational material for their patient as the goal will be to have three main videos, one for each diagnosis.

The content of the video included introduction to stroke, introduction to diagnosis of stroke, clip of either hemorrhagic, ischemic or transient ischemic attack, antithrombotic for stroke (covers aspirin, heparin, coumadin), nutritional education for stroke, exercise with stroke, psychological counseling and support groups for stroke. Similar topics were also found in the stroke handouts to keep the education consistent. The total length of each video was 10 minutes and 45 seconds.

Once the videos were refined based on material by the DNP student, the specific clips were shared with the professional development manager. One on one meeting was conducted, and material was watched and approved by the professional development manager as the material was hand in hand with the stroke handouts used in current practice. After approval, the clips were sent to the nursing informatic for three separate videos as the nursing informatic was the one to conjoin the clips and broadcast onto the intranet. After this part was done, the next step was to confirm that the navigation of assigning these videos was uncomplicated. Broadcast date for these videos was February 20th, 2019 at 10am EST.

The neuroscience nurses were provided with one on one training by the DNP student on how to assign the appropriate stroke video to their stroke patients. Support was provided by the professional development manager. The DNP student also created a step by step guide for the neuroscience department on how to assign the stroke videos which were placed around the nurses' station. This will be used as a reminder for the nurses to assign the videos as well as provide written step by step instructions. The step by step guide can be found in Appendix E.

The DNP student met with ten stroke patients prior to the broadcast date to evaluate their understanding of stroke based on the stroke handouts provided to them. Some of those individuals had not reviewed the information but had knowledge of stroke from interaction of

their interdisciplinary care team and life experience. Those patients were encouraged to take the information home with them and review while they were in the hospital to provide them the opportunity to ask questions to the neuroscience department about their diagnosis. After the broadcast start date of the video, the appropriate stroke video was assigned to the stroke patients within in the hospital and the DNP student followed up with the stroke patients to evaluate their understanding of stroke after watching the educational video. The evaluation tool was the stroke education evaluation form found in Appendix B.

The initial plan was that the DNP student will record a video about stroke, but due to restrictions of Brigham and Women's Hospital and not allowing material other than that approved by the hospital the DNP student utilized the educational video database that was already approved by the hospital which contained stroke education videos. Guidance from the nursing informatic and professional development manager helped the DNP student complete the project as the goal was to provide a visual educational program to the stroke patients. The material found on the Elsevier database helped keep the information provided with the latest research rather than outdated material. The Elsevier videos also provided better visual aids for the patient than the DNP student would have been able to do independently with images and video clips showing cranial blood flow, how clots are formed and what a brain hemorrhage looks like anatomically. Utilizing these resources was not part of the original plan but did provided the stroke patients a better understanding of the topic.

The goal of the DNP student was to evaluate ten stroke patients that had not received the visual stroke education which was done. The DNP student also wanted to evaluate 30 stroke patients that received the visual stroke education with or without the stroke handouts which was also achieved. As mentioned previously, the stroke education evaluation form was used to

complete the evaluation. The same form was used for both the patients that received the visual stroke education and those that didn't. The evaluation questions were kept simple yet targeted information that was essential to know with a diagnosis of stroke. Prior to initiation of the project, the professional development manager had stated that the main information the stroke patients were not retaining was the symptoms of stroke (Face, Arms, Speech, Time). One of the questions in the evaluation addresses the symptoms of stroke. This was important as the neuroscience department wanted to make an improvement in this area with their stroke education and patients.

Based on gathered data, it was evident that there was an improvement in the knowledge of stroke patients. The specific questions that the patients were evaluated on can be found on Appendix B. When questioning the patients risk factors of stroke, a variety of answers were received. Some of the answers included stress, hypertension, diabetes, poor diet, not taking aspirin, overweight, high cholesterol, smoking, not taking blood pressure medications and coumadin, African American race, using cocaine, family history, atrial fibrillation, and heart disease. Majority of the patients answered this question based on their own situation such as not taking medications as prescribed or having an African American descent.

The next question was about aspirin and what it is used for. The patients that were questioned prior to watching the video or patients that had only received the handouts were unsure of the answer but had heard of aspirin. Some mentioned that it is used to help with headaches, though it is not wrong aspirin has a major role in a patient with a diagnosis of stroke and it is important the patient is adequately educated on it. From the patients that watched the video, the answers included to prevent blood from clotting, blood thinner, anticoagulant, to prevent heart problems, to keep blood thin, keeps blood from clotting, prevent clots, and to

prevent heart attack. It was notable that those patients that had watched the stroke video were answering the question more confidently and more knowledgeable about stroke.

The next question was to name a sign that is visible if someone was having a stroke. This question also brought various types of answers, some of which the patients had experienced themselves. This question was important to determine if patients had an understanding of FAST (face, arms, speech, time) since that was an identified weakness in the stroke patients understanding prior to implementation of the stroke video. The answers were appropriate though the DNP student was trying to see simple answers like facial droop, weakness in arms, change in speech such as garbled speech and noting the time the symptoms began. The various answers included numbness, face heavy, headache, dizziness, in another world, confused, weakness in arm, distortion in face, trouble talking, droop on one side of face, unconscious, slurred speech, paralysis, unable to move arm or leg, trouble talking, no sensation of arms, fall due to weakness in legs and arms. Majority of the patients that were evaluated prior to receiving the stroke video used their own experience to answer the question. Whereas the patients that had received the stroke video education, used their experience and knowledge attained from the stroke video. These patients also answered the question more comfortably and answers were as expected by DNP student.

The next question was added to determine how many times the patient viewed the provided education, whether video, handout or both. Three of the ten patients that were evaluated prior to implementation of the stroke video were evaluated based on their knowledge as they had received the stroke handouts but had not reviewed it or were unable to review it based on their ability. These patients were evaluated but answered the questions based on their experience and interaction with their care team. The rest of the patients evaluated had either viewed the stroke

video, handouts or both. Those were the patients that answered the evaluation questions more knowledgeable.

The end of the evaluation consisted of a scale that allowed the patient to rate the ease of the stroke education and second question to determine if the stroke education was beneficial to their understanding of stroke. The patients were to give a rating from one to five where one meant strongly disagree, two was disagree, three was fair, four was agree, and five was strongly agree. Three of the patients that were evaluated with handouts were deferred as they hadn't reviewed the stroke handouts. Based on the other seven that were evaluated, they had a 71% satisfaction rate of the stroke education as many of them gave a three or four on the scale questions. From the thirty patients that reviewed the stroke video with or without the stroke handouts, they had a 98% satisfaction rate of the stroke education. They were very happy with the videos as out of the thirty evaluated patients stated that 98% found the stroke education to be easy to understand and beneficial to their understanding of stroke. Most of the answers were five out five with two patients that rated four out of five.

Chapter 5: Discussion

Findings

The main goal of this project was to implement a visual stroke education for the neurosciences department which was achieved by the DNP student with the assistance of the professional development manager and nursing informatic. Support from the neuroscience nurses was also important as they will directly use the tool with the stroke patients in the future. The neuroscience nurses were receptive and helpful in rolling out the new stroke education. Effectiveness of the project was evident as the patient satisfaction rate increased after implementation of the stroke video.

The main changes observed in the care delivery included that the nurses continued to assess the patient's learning style and based on the identified style the patient's education was initiated either by providing stroke handouts, assigning stroke video or both. Another change that was observed was that the nurses were able to have more time for other tasks as providing an additional resource for stroke education through a video allowed the patient and their family to view it on their own time as many times as they needed no matter what time of the day it was. The nurses followed up to assure the patient gained understanding and provided an opportunity to answer any questions or concerns they may have. By having videos tailored to the type of stroke the patient had, ischemic versus hemorrhage, confusion was minimized, and the patient learned specifically about the type of the stroke they endured.

One of the most important factors in my success of completing this project has been the support of the professional development manager of the neurosciences department. When I explained the project to her initially, she saw my vision and sat down with me several times to discuss and figure out the best method of implementing the change. She also supported the

project idea and helped to bring the attention it needed in the neurosciences department. Help and support from the neuroscience nurses was essential as they will be the one to use the stroke video to the fullest extent everyday and encourage their stroke patients to take advantage of the available resource. There were technical difficulties in the project as the DNP student had expected. After the stroke videos had been broadcasted and the DNP student educated the neurosciences nurses on how to assign the videos to the stroke patients, the patient education website malfunctioned and would not allow the nurses to select their patients. Without this, the nurses were not able to assign the stroke video to their stroke patients. This caused a small delay, but the DNP student was able to coordinate with the professional development manager and nursing informatic to figure out the cause of the problem and resolve the issue. After a few days, functions returned, and the neuroscience nurses were able to utilize the resource once again.

The intervention was effective in initiation and meeting the goals of the DNP student, professional development manager and neurosciences department. This provided ease in the care of the stroke patients as one of the major tasks of a stroke admission is providing proper stroke education. The next goal will be to maintain and utilize the new resource available to the neuroscience department as well as meet joint commission standards. The next stroke education audit is in September 2019. During that time, the DNP student is hopeful that implementation of this project will impress the joint commission and the neurosciences department will show how implementation of this project has led to a better patient understanding.

Limitations or Deviations from Project Plan

The DNP student believes that aside from deferment of recording a new video and instead using a database from Elsevier, no other deviations were encountered. Though this may be looked as a limitation, the DNP student believes that using the data available from Elsevier

provided not only the latest evidenced based practice but also minimized any future issues that could have occurred with the content that may have been used in the video. Copyright issues and plagiarism were avoided by using the content that had already been approved by the hospital but was not being utilized to its potential. This project implementation allowed the DNP student to revisit already available resources within the hospital that weren't being used and bring them forward in the attention of the neuroscience department and most importantly to the stroke patients and their families.

Due to the support of the professional development manager and neuroscience nurses, the DNP student feels confident that the implemented change will be carried out in the future practice. The nursing informatic for the neuroscience department specifically works on stroke education and enforcing valid practice is being maintained. There is also a stroke education nurse that follows up with the stroke patients after discharge to address any questions, concerns and determines if the stroke education the patient received was effective. This provides the patient with another chance to receive any education they may not have understood and allows the neuroscience department to learn if there is any deficiency in the stroke education.

Implications

Generalizability can be made on this study as stroke patients have various issues that could affect their learning. Since this implementation provides an additional resource that can only improve the learning process of the stroke patients. It can be predicted that the intervention will continue to be successful though it may require modification if there is a change in practice or lifestyle of having a stroke.

Future research should continue to be done to determine the ongoing effectiveness of the stroke education with the patients and their families. If the stroke patients fail to understand a

certain topic of the stroke education, the stroke video may need to be adjusted to address the issue. Medicine changes day by day therefore it will be important to be sure that the information being provided to the patients is up to date with the latest evidenced based practice.

There is potential for interdisciplinary collaboration in the stroke education as the stroke patients get evaluated by physical therapy, occupational therapy and speech therapy. Though these interdisciplinary teams work with the patient and in the future may decide to include videos or therapeutic clips that will aid the difficulties they are facing such as weakness or disabilities caused by the stroke.

Future practice inquiry or research questions can involve study of the barriers that affect the stroke patient's comprehension related to the disease such as aphasia or confusion. Further research could also be done on the stroke patient's family and if education is beneficial to them during hospitalization, at discharge or after going home.

A formal dissemination wasn't required or done at the hospital, but the members of the neuroscience's unit were trained and educated on the new intervention, goals of the intervention and how it will help the unit flow in the future. There will be a dissemination done for Bradley University to present the project after appropriate approvals are received. The DNP student will continue to help the professional development manager with stroke education and if further education/training is needed within the neurosciences department or within the hospital.

Implementing this project has had a significant impact on the nursing care provided in the neurosciences department as the neuroscience nurses were the primary members of the team educating the stroke patients and their families. They are responsible for providing education on the diagnosis, medications and how the diagnosis will affect their life. This is essential in the care of a stroke patient as they experience many changes including physical, mental and

emotional. By implementing this project, it provided the neuroscience nurses with an extra resource to complete the education that is required. Since this project implemented a visual/video educational program of stroke, the hope is that the neuroscience nurse can help the patient access the material and then can be excused to complete other tasks. The neuroscience nurse will then follow up with the patient after they have viewed the stroke video to check if the patient or family has any questions or concerns. This project will also help to keep the education of stroke consistent with the patient population as the same evidenced based practice information will be shared with the patient and family rather than what the nurse's knowledge is or technique of education.

The DNP student suggests that ongoing evaluation is done on not only stroke patients but any vulnerable population to determine if they are receiving adequate education throughout their hospitalization. Advanced practice nurses can especially help to evaluate patient understanding and satisfaction while making changes that may help address issues or barriers to patient's learning. By constantly checking the latest evidence-based practice, it will not only improve the nursing practice, nursing education but also patient care.

The health care policy to address the patient's learning style and provide appropriate educational material regarding their diagnosis and hospitalization was addressed by implementing this project. Previous practice included addressing the patient's learning style but only providing the patient one method of learning about their stroke. By implementing this project an additional resource was provided to the neurosciences department as well as the patients.

The database that was explored by the DNP student containing the stoke videos also included videos about various other diagnoses, conditions and procedures. The DNP student

believed the next step in policy development and reform would include analysis of the other departments and how education is provided to their patients such as a cardiology patient after experiencing a myocardial infarction. Providing these patients an additional method of education such as a video presentation will be beneficial to their understanding of the diagnosis based on the identified learning style. By efficiently educating patients and family will lead to better knowledge within the community in hopes that there is a decrease in future incidents like stroke or knowledge of getting care in an appropriate time span.

Chapter 6: Conclusion

Value of the Project

In conclusion, the implementation of this project has provided a valuable tool for the neurosciences department and has the potential of making an impact hospital wide if brought to the other departments. Providing an extra resource for educating the patients was found to have a good result. Patient satisfaction and patient understanding of stroke was improved based on evaluation of the stroke patients. There was also positive verbal feedback from the neurosciences department including the professional development manager, nursing informatic, nursing director and neuroscience nurses. The DNP student's main purpose of implementing this project was to provide an additional resource as well as keep the information involved in the stroke education consistent with each stroke patient. Implementation of this project helps to keep the stroke education more consistent with the vulnerable population.

DNP Essentials

Implementation of this project helped the DNP student advance in the competency assessment. Specifically, by implementing the stroke education video by coordinating with the professional development manager and nursing informatic as well as educating the neuroscience nurses helped advance in essential 1, 2, 4, 5 and 6. The DNP student evaluated thirty stroke patients after viewing the stroke video and ten stroke patients that had only received the former handout education as well as analyzing the data obtained helped advance in essential 2, 4, 5, 7 and 8. Completing the scholarly project paper as well as gathering data and evaluations of stroke video education helped advance the DNP student in essentials 3, 6 and 8. Finally, by disseminating the project to Bradley University and getting the approvals needed to complete the project will help the DNP student advance in essentials 2, 6 and 7.

Plan for Dissemination

The plan for dissemination will be a virtual presentation due to the extensive distance of the DNP student and Bradley University. The plan for dissemination will be coordinated by the DNP student and the chairman of the project. After the appropriate approvals are attained and the project has been disseminated the project will be submitted to the e-Repository.

Attainment of Personal and Professional Goals

This project has allowed me to attain new personal and professional growth. This project helped me to connect with other advanced practice nurses such as the professional development manager and nursing informatic to implement this project. This project helped me see a different vision of leadership and also helped me bring this vision to my peer neuroscience nurses leading to not only professional growth but also personal growth.

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Appendix B: Stroke Education Evaluation Form

Date: ____/____/_____

Method of Education: Video ◯ Handout ◯

What is a risk factor of stroke?

What is Aspirin used for?

Name one sign that may be visible if someone is having a stroke.

How many times did you review the stroke education video or handout?

On a scale of 1-5, rate the following questions. *(circle one)*

1= Strong Disagree 2= Disagree 3= Fair 4= Agree 5= Strongly Agree

Did you find the stroke education easy to understand? 1 2 3 4 5

Did you find the stroke education beneficial to your understanding of stroke? 1 2 3 4 5

Appendix C: Budget Table

Program Expenses		
Salaries/Wages: Human resources	**Monthly**	**Total**
Professional Development Manager	$8,400	$33,600
Neuroscience Nurse	$6,600	$26,400
Nursing Director	$9,000	$36,000
Nursing Informatics	$7,750	$31,000
Total Salary Costs		**$127,000**
Startup Costs		
Handouts		$100
Total Startup Costs		**$100**
Capital Costs		
Equipment (Television/Intranet)		$0
(No cost as the television and intranet system is already in place, not a new cost)		
Total Capital Costs		**$0**
Operational Costs – N/A		
Total Operational Costs		**$0**
Program Revenue (Per patient)		
Ischemic Stroke (Primary diagnosis)		$15,180
Hemorrhagic Stroke (Primary diagnosis)		$36,176
Total Project Revenue		**$51,356**
Program Benefit/Loss		
Total Revenue		**$51,356**
Less Expenses		**$127,000**
Total Program Benefit/Loss		**-$75,644**

Appendix D: Project Timeline

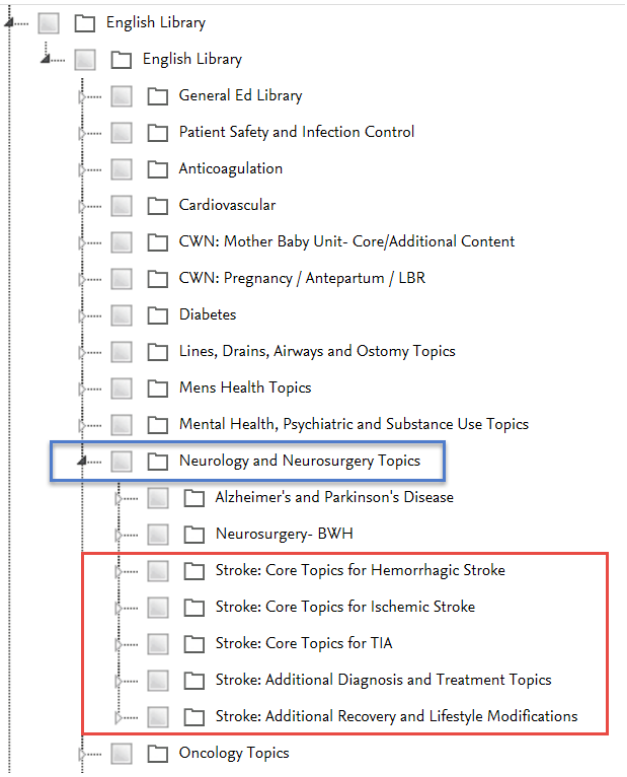
September 2017	Project vision
October 2017	Project approval/Mentor approval
November 2017	Literature Review
December 2017	Synthesis of Evidence
January 2018	Scholarly project approval/Mentor approval
February 2018	Research/Proposal 1
March 2018	Research/Proposal 2
April 2018	Defense Meeting/IRB application/Proposal 3
May 2018-December 2018	IRB modification/approval
January 2019	Creation of visual stroke education presentation
February 2019	Working with nursing informatic to broadcast video Train neuroscience nurses Assign visual education to stroke patients
February 2019	Collect Data
March 2019	Collect Data
March 2019	Evaluate Data
March 2019	Complete scholarly paper/project
April 2019	Dissemination of project

Appendix E: Flyer for Neuroscience Department

STROKE EDUCATION VIDEOS

The videos can now be accessed to assign our stroke patients!

- ➔ Under the "Partners applications", go to "Patient Education Videos"
- ➔ Find your patient from the dropdown box
- ➔ Click on Assignments
- ➔ Open the Neurology and Neurosurgery Topics
- ➔ Check off the box that is appropriate for your Stroke patient (e.g., Ischemic, Hemorrhagic, TIA)



Click Save and your all set!

The next time the patient turns their TV on, they will be reminded that they have assigned videos to watch.

Upon discharge or after a patient watches the videos, their "Video Report Card" can be accessed, printed, and placed in the chart to receive credit for stroke education.