PROMOTING URINARY CONTINENCE:

EDUCATION PROGRAM FOR

NURSING STAFF USING THE

3-DAY VOIDING RECORD

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Dedication and Acknowledgements

I would like to dedicate this project to first and foremost, God, who has provided me with everything that I needed and made this possible. Also, I would like to dedicate this project to my faithful and loving husband, Dale, and my children, John, and Nysia. Their continued support and encouragement throughout this journey have made this accomplishment possible. Finally, I would like to dedicate this project to my mother and father, Judy and Clarence Joyner, who made me who I am today. Thank you.

Abstract

Background: Strokes are one of the major causes of disability in the United States (US) and fifth leading cause of death. Urinary incontinence (UI) is one of the complications of stroke and is associated with poor quality of life, nursing home placement, and mortality. Stroke guidelines for UI include prompt voiding as a strategy to improve UI. While guidelines to address UI are recommended, often this strategy is not implemented in inpatient rehabilitation facilities (IRF). **Purpose:** The purpose of this project was to assess whether a prompt voiding education program provided to nursing staff increased knowledge of prompt voiding and 3-Day voiding record for individualized prompt voiding schedule development with patients who suffered a stroke in an IRF. **Methods:** A nurse led prompt voiding education program was implemented. Nursing staff completed a pre- and post-survey to assess UI and prompt voiding knowledge. After the education program, the 3-Day voiding record and prompt voiding were implemented for four weeks. A post-implementation survey to assess likelihood of prompt voiding and 3-Day voiding record and barriers to these strategies were completed. **Results:** Analysis of pre- and post-survey results were not significant for increase in knowledge of UI and prompt voiding, clinical significance was present as 80% of the participants noted prompt voiding as a strategy for UI. Post-implementation survey results showed 88% (n=8) of the participants were likely to continue with prompt voiding even though 50% (n=6) of the participants experienced barriers. **Conclusions and Recommendations:** All participants had knowledge of prompt voiding prior to the education program; however, did not apply this UI strategy in their care. Addressing barriers to implementation and developing mentors to facilitate prompt voiding is needed to improve adherence to evidence based guidelines for stroke.

Key words: stroke, urinary incontinence (UI), stroke guidelines, urinary incontinence strategies

Background and Significance

Every year, 795,000 people suffer a stroke in the United States (US), which is one of the major causes of disability in adults (Center for Disease Control and Prevention [CDC], 2020a). In the US, 160,264 deaths are attributed to stroke complications and stroke is the fifth leading cause of death (Center for Disease Control and Prevention [CDC], 2020b). There are two types of strokes: hemorrhagic and ischemic (John Hopkins Medicine, 2022). The ischemic stroke is most common with 87% of strokes being ischemic and 13% being hemorrhagic (John Hopkins Medicine, 2022). The likelihood of a recurrent stroke is one in four within the first five years and 3% have a stroke again in 30 days (John Hopkins Medicine, 2022). Cognitive, musculoskeletal, psychosocial, urinary and bowel incontinence, post-stroke seizures, and sensory difficulties are long-term complications of a stroke (Chohan et al., 2019). Complications could lead to significant disabilities, hospital readmissions, or death (Chohan et al., 2019).

Severe disabilities could increase healthcare costs and financial burdens to the family of the stroke survivor and may require the stroke survivor to be placed in a nursing facility for long term care. Of stroke survivors, 10% require long-term care and 15% die shortly afterwards (American Heart Association [AHA] & American Stroke Association [ASA], 2016). Of the complications of stroke, urinary incontinence (UI) is associated with poor quality of life, further decline in function, increase in hospital length of stay, and increased burden of care (Chohan et al., 2019; John et al., 2016; Kohler et al., 2020). Urinary Incontinence is common for stroke survivors and 25% experience UI after the initial stroke and 15% continue to experience UI a year after suffering a stroke (AHA & ASA, 2016). Urinary Incontinence is a predictor of poor recovery from the stroke, nursing home placement, and mortality (AHA & ASA, 2016; John et al., 2016; Kohler et al., 2020). Stroke survivors are also at high risk of having falls due to UI

(Najafpour et al., 2019). To prevent or improve the risk of these UI complications, stroke guidelines which include prompt voiding should be implemented.

Stroke guidelines for UI include assessment of history, retention, and cognitive awareness (AHA & ASA, 2016). Suggested in the stroke guideline to improve UI is the intervention of prompt voiding, which is prompting the person to void on a toileting schedule. Further, best practice guidelines include using a 3-Day voiding record to individualize the prompt voiding schedule (Registered Nurses' Association of Ontario [RNAO] et al., 2016). The 3-Day voiding record, records when intake and output occurred along with details of the intake and output such as incontinency and types of fluids (RNAO et al., 2016). The 3-Day voiding record identifies patterns of incontinency and can be helpful to identify appropriate candidates for prompt voiding (RNAO et al., 2016). Stroke survivors who can initiate voiding when prompted are more likely to be successful with prompt voiding (RNAO et al., 2016). Therefore, knowledge and implementation of the 3-Day voiding record and prompt voiding are recommended to improve patient outcomes.

Purpose

The purpose of this project was to assess whether a prompt voiding education program provided to nursing staff increased knowledge of prompt voiding and 3-Day voiding record for individualized prompt voiding schedule development with patients who suffered a stroke in an Inpatient Rehabilitation Facility (IRF).

Review of Current Evidence

The purpose of this review was to find best evidence-based practices for UI in the stroke population. Databases searched included CINAHL, PubMed, Scopus, and Cochrane Library. Keyword search phrases included: urinary incontinence and stroke, stroke and guidelines,

prompt voiding and incontinence and stroke, evidence-based practice and stroke, and urinary incontinence and cerebrovascular accident; there were 396 articles were found. Literature was narrowed to the past five years and resulted in 61 articles found. Inclusion criteria consisted of post-acute care settings, outcomes related to prompt voiding education or implementation, barriers, or challenges with implementation of prompt voiding, clinical trials, meta-analysis, and randomized control trials. Exclusion criteria consisted of urinary incontinence related to recent catheter use or other disease processes, pelvic exercise regimens for UI, urinary incontinence related to other disease processes, surgical interventions for UI, or other interventions except prompt voiding. After inclusion and exclusion criteria were applied, 19 articles were reviewed, and themes found were education of prompt voiding for nursing staff, caregivers, and patients, implementation of prompt voiding, and psychological, enabling, and inhibiting factors.

Education of Stroke Guidelines and Prompt Voiding

Education of stroke guidelines for UI provided to nursing staff, interdisciplinary staff, patients, and caregivers increased their knowledge of UI, their awareness of the need for prompt voiding, and significantly improved UI with prompt voiding (Hägglund & Olai, 2016; Lappen et al., 2016; Lima et al., 2015; Siswoyo et al., 2020; Vaz et al., 2019). Prompt voiding education promoted prompt voiding implementation and significantly improved UI (Davis, 2020; Rosenburg & Cibrian, 2017; Siswoyo et al., 2020). Education of 3-Day voiding record developed awareness of incontinency patterns and resulted in UI improvement (Gibson, 2018; Talley, 2017). Increased knowledge of stroke guidelines for UI improved consistency in assessment of UI, development of care plans for UI, and implementation of prompt voiding by the nursing staff (Hägglund & Olai, 2016; Lappen et al., 2016; Siswoyo et al., 2020). The literature review found awareness and knowledge of stroke guidelines improved nursing staff

applications of strategies to improve UI (Hägglund & Olai, 2016; Lappen et al., 2016; Lima et al., 2015; Siswoyo et al., 2020; Vaz et al., 2019). Further, increased knowledge of stroke guidelines for UI promoted confidence in implementing 3-Day voiding record and prompt voiding by patients and their caregivers (Gibson, 2018; Hägglund & Olai, 2016; Lima et al., 2015; Siswoyo et al., 2020; Talley, 2017; Vaz et al., 2019).

Implementation of Prompt Voiding

Significant improvement of UI was found in studies that included both education of stroke guidelines for UI and prompt voiding (Davis, 2020; Rosenburg& Cibrian, 2017; Siswoyo et al., 2020; Talley et al., 2017). Tools such as physical activity, visual aids, or technological devices along with knowledge and application of prompt voiding resulted in successfully improving UI (Davis, 2020; Talley et al., 2017; Vaz et al., 2019). Voiding dairies developed awareness of voiding patterns and noted how stimulants such as caffeine worsened incontinence (AHA &ASA, 2016; Bostrom, 2021; Registered Nurses' Association of Ontario [RNAO], 2011; RNAO, 2016). These diaries were recommended as a strategy to individualize prompt voiding and increase the success of UI improvement in stroke care (AHA & ASA, 2016; Bostrom, 2021; RNAO, 2011; RNAO, 2016). Prompt voiding individualized by the patterns of the 3-Day voiding record are most successful for improving UI (RNAO et al., 2016). A few studies included voiding diaries as a strategy but did not include individualized prompt voiding schedules with the diary results (Gibson, 2018; Lima et al., 2015; Vaz et al., 2019; Wilson, 2016).

Psychological and Enabling Factors

Patients suffering from UI were found to have preconceived ideas of the inability to improve UI, fears of accidents, unpleasant feelings when soiled, embarrassment, frustration, and

a sense of powerlessness (French et al., 2016; Gibson, 2018). Psychologically, stroke survivors, caregivers, and nursing staffs' buy-in, understanding or knowledge, and perception of success with improving UI correlated and potentially enabled improvement of this complication (Davis, 2020; French et. al., 2016; Gibson, 2018; Hägglund & Olai, 2016; Vaz et. al., 2019). Also, understanding and acknowledgement of prompt voiding as evidence-based practice promoted staff and caregivers to embrace implementation of prompt voiding (Hägglund & Olai, 2016; Lappen, 2016). Furthermore, patient and family engagement in assessment of UI and development of a plan of care provided a sense of hope (French et. al., 2016; Gibson, 2018; Hägglund & Olai, 2016; Lappen, 2016).

Gaps

Limited literature was found discussing strategies for the implementation of prompt voiding and individualizing prompt voiding. Also, limited literature was found that included interdisciplinary staff such as physical therapy or occupational therapy in plans of care to improve UI (Lappen, 2016). Most studies occurred in skilled nursing facilities or outpatient settings and did not involve inpatient rehabilitation facilities (Davis, 2020; French et al., 2016; Hägglund & Olai, 2016; Lappen, 2016; Rosenburg& Cibrian, 2017; Talley, 2017; Yates, 2017). Further, strategies and implementation of these UI strategies were present but barriers to implementation were lacking.

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Theoretical Model

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The Awareness-to-Adherence Model provided an excellent structure to implement nursing education of stroke guidelines for UI. This model has four steps, which consist of awareness, agreement, adoption, and adherence (Pathman et al., 1996). Awareness of stroke guidelines for UI improved adherence of prompt voiding, so the logical course of action would

be to structure this project with a framework that promoted awareness (Hägglund & Olai, 2016; Lappen et al., 2016; Lima et al., 2015; Siswoyo et al., 2020; Vaz et al., 2019).

The first step in the model is awareness (Pathman et al., 1996). This model provided guidance to measure awareness of stroke guidelines for UI prior to and after the educational program. For compliance, awareness must be achieved (Pathman et al., 1996). Agreement, which is the second step in this model, does not always occur with adoption; however, awareness must occur before adoption (Pathman et al., 1996).

The third step in the Awareness-to-Adherence Model of adoption guided implementation of prompt voiding and assessment of knowledge of UI and barriers to implementation. Surveys assessed knowledge of stroke guidelines that included prompt voiding and identified barriers for implementation by the nursing staff. For nursing staff to adopt stroke guidelines for UI and prompt voiding practices, knowledge of these practices and barriers to implementation must be evaluated first.

Adherence is the final step of this model and is the most significant to prevent deviation (Pathman et al., 1996). To achieve adherence, agreement needs to occur (Pathman et al., 1996). The pre- and post-program survey results and post-implementation survey results of barriers provided knowledge of interventions to improve adherence of prompt voiding. To achieve adherence of prompt voiding, nursing staff must clearly understand the evidence-based guidelines regarding UI.

Methods

Design

This project used a pre-post program survey that assessed knowledge of evidence-based guidelines for UI before and after an education program. This program included types of UI and

strategies of prompt voiding and the 3-Day voiding record. Following this education program, the implementation of the 3-Day voiding record and individualized prompt voiding schedules by the nursing staff for patients who suffered a stroke was initiated for four weeks. Next, nursing staff completed a post-implementation survey that evaluated barriers to the 3-Day voiding record and prompt voiding implementation and likelihood to continue the practice as a strategy for UI.

Translational Framework

Advancing Research and Clinical practice and close Collaboration (ARCC) model was the framework used to structure this project (Melnyk, 2012). This model was developed to implement research findings into practice to improve quality (Melnyk, 2012). The ARCC model has four concepts, which include identification of barriers and facilitators that are present, barriers that need to be eliminated or managed and facilitators that need to be implemented, identification of beliefs and attitudes that must be developed, and identification of the culture that must be supported by mentors to continue growth and sustainment (Melnyk, 2012). The pre-and post-program survey and the post-implementation surveys provided insight for mentors needed to continue this practice.

First, the ARCC model begins with an assessment of the culture and readiness of EBP within the organization (Melnyk, 2012). Since this healthcare system is Magnet Designated, EBP is the framework and structure for quality and patient centered care. Also, identification of strengths and barriers of EBP implementation is a principle of the ARCC model, and nursing education provided support and strengthened facilitators to apply EBP. Further, management or elimination of the barriers help strengthen the EBP implementation.

Population

Participants in this evidence-based program included registered nurses (RNs), licensed practical nurses (LPNs), and nurse technicians (NTs) providing care to patients with UI following a stroke at an IRF. The exclusion criteria were any nursing staff sent from other departments to assist this IRF during the time of this project. In addition, nursing staff employed by another agency working in the IRF setting during the time of the project were excluded.

Setting

The project took place at an IRF with 49 licensed beds at a private, not for profit healthcare system in central North Carolina. Common diagnoses of patients served by this IRF included stroke, traumatic brain injury, multiple traumas, limb-loss, spinal cord injuries, and debility due to medically complex conditions. The IRF facility employs over 100 nursing staff, along with five physiatrist, two physician assistants, over forty therapists, and twelve administrative personnel. The IRF is accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF) and is certified in three specialties: Stroke, Brain Injury, and General Rehabilitation.

Project Implementation

An education program of the stroke guidelines for UI with implementation of prompt voiding for patients in an IRF was chosen due to non-adherence of this practice by the nursing staff. The 30-minute education program was conducted during a required staff meeting. To assess if the education program improved nursing staffs' knowledge of stroke guidelines for UI, pre- and post-program surveys were conducted. In addition to an education program, 3-Day voiding record and an individualized prompt voiding schedule were implemented for patients

suffering a stroke with UI. Following implementation for four weeks, evaluation of the likelihood to continue the 3-Day voiding record and prompt voiding and barriers to these practices were assessed.

Actions taken and what support/resources were used

Care coordinators are registered nurses, employed with the IRF, have a certification in rehabilitation nursing, and act as a resource to the staff nurses on the IRF.   The care coordinators educated the patients and families of the 3-Day voiding record. Once the 3-Day voiding record was completed, care coordinators developed an individualized prompt voiding schedule and placed a laminated clock in the patient's room, educated the patient and family on the individualized prompt voiding schedule, and placed a water drop outside the patient's door indicating the patient had a prompt voiding schedule.

Instruments

Demographic data of the nursing staff was collected on the pre-program survey (Appendix A). The demographic data included role (Nurse Tech, LPN, RN), years of experience (less than 6 months, 6 months to 1 year, 1 to 3 years, 3 to 5 years, 5 to 10 years, more than 10 years), and how many years employed with IRF (less than 6 months, 6 months to 1 year, 1 to 3 years, 3 to 5 years, 5 to 10 years, more than 10 years). The pre-program and post-program survey (Appendix B) included questions that evaluated change in knowledge with responses of agree, disagree, or do not know. The post-implementation survey (Appendix C) included ratings measured on a Likert scale from 1 to 5, with 1 being not at all and 5 being very likely. The pre- and post-program survey and post-implementation survey were developed for this project due to the inability to find any instruments measuring the same data.

Timeline and critical milestones

The 30-minute educational program was held on July 12, 2021. Implementation of the 3-Day voiding record and prompt voiding schedule began on July 19, 2021 and lasted for 4 weeks. The post-implementation survey included a QR code that was sent via email and posted at each nursing station on August 18, 2021. Nursing staff had two weeks to complete the post-implementation survey and were reminded about the survey daily at shift change.

IRB approval

An approval was obtained by the Institutional Review Board (IRB) of the university and the healthcare system before the project was implemented. To protect the nursing staff that participated, each participant drew a number when entering the room to participate in the education program. The participant did not share the number with anyone and entered the same number on the pre-and post-program survey. Once the post-program survey was completed, the participant discarded the number. The pre-program survey included a QR code utilizing Survey Monkey prior to the education program and the post-program survey included a QR code and was administered immediately after the education program. The post-implementation survey was delivered via email with a QR code and did not include any identifiable information of the participants.

Steps implemented

To assess knowledge, a pre-program survey was administered that included questions related to knowledge of EBP of incontinent care and prompt voiding for patients with a diagnosis of stroke. Each participant used their phone to scan the QR code to access the pre-program survey. Next, a 30-minute education program focused on types of bladder incontinence, prompt voiding schedules for incontinent care, 3-day voiding record to identify continent and incontinent

patterns and individualized voiding schedules. At the end of the education session, participants completed a post-program survey accessed by scanning the QR code using their phones to assess their knowledge. Following the education program, the 3-Day voiding record and prompt voiding program was implemented with patients with a diagnosis of stroke for 4 weeks. The care coordinators trended the patterns from the 3-Day voiding records and developed individualized prompt voiding schedules. Patients with prompt voiding schedules were identified by a water drop illustration outside of the patient's door. The care coordinators updated the laminated clock in the patients' rooms to be individualized according to the voiding patterns identified. The nursing staff communicated the patient was on a prompt voiding schedule using either the 3-Day voiding record or the individualized prompt voiding schedule at each shift change. After 4 weeks of implementation, a post-implementation survey accessed by a QR code was administered for nursing staff to assess likelihood to continue 3-Day voiding record and prompt voiding. Additionally, barriers to implementation were assessed in the survey and ranked as mild, moderate, and severe.

How data were collected

The pre- and post-program survey and post-implementation survey responses were collected using Survey Monkey. Data compiled from survey monkey were exported to an Excel spreadsheet for data analysis. Data was stored via Box, a secure cloud-based storage service and accessed using a password protected corporate account. This data did not include any protected health information (PHI) or personal identifiers.

Data Analysis

The pre- and post-program survey data were matched and entered in the Statistical Package for the Social Sciences (SPSS) and a McNemar test was conducted. The McNemar test

was chosen for the analysis due to dichotomous data. McNemar test is useful in determining if there is a difference between two dichotomous data sets (Sundjaja et al., 2022). Descriptive statistics were used to describe the nursing staff that participated, barriers to prompt voiding, implementation of the 3-Day voiding record and prompt voiding program, and likelihood of adopting this program.

Results

Thirteen nursing staff members participated in the education program. Twelve participated in the pre-program survey and eleven participated in the post-program survey. Three participants did not complete pre- and post-program surveys and were not compared but were included as independent results. Eight participated in the post-implementation survey. All participants had at least six months of experience in their role and 33% of the 12 participants had over ten years of experience. Table 1 describes the demographics of all participants.

The results of the pre- and post-program survey were compared by the number of correct answers on the pre-program survey compared to the number of correct answers on the post-program survey for ten participants. This comparison assessed whether the participants gained knowledge of stroke guidelines for UI after the education program. A value of zero was given to each participant with four or less correct answers. A value of one was given for five or six correct answers. None of the ten participants had a value of one on the pre-program survey and a value of zero on the post-program survey, which would indicate the participants had knowledge of stroke guidelines for UI before the educational program but not afterwards. One participant had six correct answers on both the pre- and post-program survey, which was given a value of one for both surveys. One participant had a value of zero on pre-program survey and a value of one on the post-program survey, indicating this participant gained knowledge of the stroke

guidelines for UI after the education program. One participant had a value of zero for both the pre- and post-program survey, indicating the participant did not have stroke guidelines for UI knowledge before or after the education program. Eight out of the ten participants answered at least five out of six questions correctly on both the pre- and post-program survey. This indicated knowledge of stroke guidelines of UI was present prior to the education program. All ten participants answered the prompt voiding question correctly on the pre-program survey, which demonstrated knowledge of UI strategies. Although, eight out of ten participants answered the question about bladder scanning every six hours being evidence-based practice incorrectly, which demonstrated no knowledge of evidence-based practice. The results of the pre- and post-program surveys of the ten participants were entered into SPSS and a McNemar test was conducted. The Chi-Square was 0.00 with the alpha value of 0.05, the critical value of 3.841, and the p-value of 1.000. Since Chi-Square value is less than the critical value, there was no significant difference between pre- and post-program survey results.

The independent results not included in the McNemar test due to both pre- and post-program surveys not completed were analyzed independently. Two participants took only the pre-program survey, with one that answered three questions correctly and one participant that answered all the questions correctly. One participant took only the post-program survey and answered five questions correctly.

The post-implementation survey results showed 88% of the eight participants that answered this question were likely to continue with prompt voiding even though 50% of the six participants that answered this question experienced barriers with implementation of prompt voiding. Table 2 shows the participants' likelihood to continue or not continue with the 3-Day voiding record and prompt voiding along with how many participants experienced barriers. For

the 3-Day voiding record, the highest rated barriers were the patient's lack of understanding and the lack of two-person assistance. Table 3 explains the severity of barriers for the 3-Day voiding record by the participants. The highest rated barriers for prompt voiding were the lack of two-person assistance, lack of understanding, and time needed. Table 4 describes the severity for barriers experienced with prompt voiding.

Table 1

Demographics of Participants

Characteristics	*n*	%
Role		
NT	4	33
LPN	3	25
RN	5	42
Experience		
Less than 6 months	0	0
6 months to 1 year	2	17
1 year to 3 years	3	25
3 years to 5 years	1	8
5 years to 10 years	2	17
Greater than 10 years	4	33

Note. n= 12 (one participant did not complete demographic survey) Abbreviations are as follows: Nurse Tech (NT), License Practical Nurse (LPN), Registered Nurse (RN)

Table 2

Post-Implementation Survey Results

Questions	*n*	%
How likely to use 3-Day Voiding Record?		
Very unlikely	1	12.5
Unlikely	3	37.5
Neither likely or unlikely	1	12.5
Likely	3	37.5
Unlikely	0	
How likely to continue prompt voiding?		
Very unlikely	0	
Unlikely	1	12.5
Neither likely or unlikely	0	
Likely	7	87.5
Very likely	0	
Encounter any barriers to 3-Day Voiding Record?		
No Barriers	1	14.3
No, didn't experience	2	28.6
Yes, barriers	4	57.1
Encounter any barriers to prompt voiding?		
No barriers	1	16.7
No, didn't experience	1	16.7
Yes, barriers	4	66.6

Note. No, didn't experience means that the participant did not experience either the 3-Day Voiding Record or the Prompt Voiding.

Table 3

Barriers to 3-Day Voiding Record

Barriers	n	%
Understanding how to complete		
Minimal	1	25
Moderate	3	75
High	0	0
Time needed to complete		
Minimal	1	25
Moderate	2	50
High	1	25
Patient's lack of interest		
Minimal	0	0
Moderate	4	80
High	1	20
Patient's lack of understanding		
Minimal	1	25
Moderate	1	25
High	2	50
Lack of staff assistance of 2 people		
Minimal	2	50
Moderate	0	0
High	2	50

Table 4

Barriers to Prompt Voiding

Questions	n	%
Understanding how to follow or carry out prompt voiding		
Minimal	1	33.3
Moderate	2	66.7
High	0	0
Time needed to carry out prompt voiding		
Minimal	0	0
Moderate	2	50
High	2	50
Patient's lack of interest		
Minimal	0	0
Moderate	3	75
High	1	25
Patient's lack of understanding		
Minimal	1	25
Moderate	3	75
High	0	0
Lack of Staff Assist with 2 people		
Minimal	2	50
Moderate	0	0
High	2	50

Barriers to Success

Participation in the education program was limited and 33% of participants had greater than 10 years of experience. The limited availability of the education session could have been a factor in the low participation rate due to the variability of hours the nursing staff worked. Further, with the limited participation by the nursing staff, few members of nursing staff had knowledge of the implementation phase of the project.

Another barrier of the project was education of the stroke guidelines for UI provided, might have been unclear. This was noted because two participants changed correct answers on the pre-program survey to incorrect answers on the post-program survey. The question related to bladder scanning every six hours as a UI strategy leads to the concern that current practice of bladder scanning at this IRF may be considered evidenced based by the participants. In addition, three participants did not complete both surveys so were not included in the analysis for this project.

Strengths to Overcome Barriers

Notification of the implementation phase with the explanation of how to carry out the 3-Day voiding record along with placement of the record outside the patient's door were announced daily at change of shift for those who did not participate in the education program. In addition, notification of the meaning of the water drop outside the patient's rooms was announced in for nursing staff to be aware. Also, the post-implementation survey was announced daily at change of shift as a reminder to staff.

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Discussion

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Findings of the pre- and post-program surveys indicated the participants were knowledgeable of the stroke guidelines for UI; however, did not apply UI strategies such as prompt voiding in their daily care. No significant difference was found between the pre- and the post-program surveys, which concludes that there was no knowledge gained from the UI education program. Further, eight out of ten participants that took the pre-program survey answered at least five out of six questions correctly, concluding 80% of the participants had knowledge of stroke guidelines for UI prior to the education program. With the limited amount of participation from all nursing staff employed at this IRF, 13% overall participation, the

knowledge of the nursing staff continues to be in question. Recommendations to improve

implementation of prompt voiding and individualized prompt voiding schedules as strategies for

UI would be to increase education programs at varied times to allow for greater participation by

the nursing staff.   According to evidence, awareness of stroke guidelines for UI significantly

improves implementation of UI strategies (Hägglund & Olai, 2016; Lappen, 2016).

Barriers were identified with the post-implementation survey and could potentially give

insight on reasons why nursing staff did not implement the stroke guidelines for UI. The highest

rated barriers were not having two-person assistance, time, and understanding of the 3-Day

voiding record. Barriers must be managed to move to the next stages of adoption and adherence.

The pre- and post-program survey results concluded the participants might not of understood

their current knowledge was based on EBP. The first step of the ARCC model is to evaluate the

readiness of EBP culture, which was not done (Gorsuch et al., 2019). Since the facility was

Magnet Designated, the assumption was the IRF was ready, and no assessment was needed.

Conclusion

The nursing staff who participated in the education program were aware of the stroke

guidelines for UI and 88% of the nursing staff that participated plan to continue with prompt

voiding. Evidence-based literature finds that nursing staff will implement UI strategies if aware

of stroke guidelines for UI (Hägglund & Olai, 2016; Lappen, 2016). Recommendations for

future projects would be to increase education and assess readiness to implement stroke

guidelines for UI. Identification and steps to address barriers can improve future implementation

for UI strategies. Barriers to address are lack of time to implement prompt voiding and lack of

two-person assistance. Steps to address these barriers have the potential to increase buy-in and

implementation of EBP for UI by the nursing staff. To facilitate implementation and adherence

to stroke guidelines through prompt voiding, nursing staff mentors should be considered. Also,

dissemination of findings in this project will be presented via a poster presentation at the

university and project site. Lastly, this poster will be submitted for consideration at the national

conference for Association of Rehabilitation Nurses in October of 2022.

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Appendices

Appendix A: Pre-Program Survey

Demographics:

1. What is your role?

a. Nurse Tech

b. LPN

c. RN

2. How many years of experience do you have in your role?

a. < 6 months

b. 6 months to 1 year

c. 1 year to 3 years

d. 3 to 5 years

e. 5 to 10 years

f. > 10 years

3. How many years have you been employed with the IRF?

a. < 6 months

b. 6 months to 1 year

c. 1 to 3 years

d. 3 to 5 years

e. 5 to 10 years

f. > 10 years

Below are some statements about urinary incontinence. Please state if you agree or disagree with the statement, or if you do not know.

1. Old age is the main cause of urinary incontinence.

a. Agree

b. Disagree

c. Do not know

2. Urinary incontinent patients cannot become continent.

a. Agree

b. Disagree

c. Do not know

3. It takes more time to toilet a patient versus changing a patient with urinary incontinence.

 a. Agree

b. Disagree

c. Do not know

4. A best evidence-based practice for urinary incontinency is bladder scan every 6 hours.

a. Agree

b. Disagree

c. Do not know

5. Overflow incontinency is when the patient drinks too much fluid.

a. Agree

b. Disagree

c. Do not know

6. Prompt voiding is when the patient is on a toileting schedule every 2 hours.

a. Agree

b. Disagree

c. Do not know.

Appendix B

Post-Program Survey

Below are some statements about urinary incontinence. Please state if you agree or disagree with the statement, or if you do not know.

1.   Old age is the main cause of urinary incontinence.

a.   Agree

b.   Disagree

c.   Do not know.

2.   Urinary incontinent patients cannot become continent.

a.   Agree

b.   Disagree

c.   Do not know.

3.   It takes more time to toilet a patient versus changing a patient with urinary incontinence.

 a.   Agree

b.   Disagree

c.   Do not know.

4.   A best evidence-based practice for urinary incontinency is bladder scan every 6 hours.

a.   Agree

b.   Disagree

c.   Do not know

5.   Overflow incontinency is when the patient drinks too much fluid.

a.   Agree

b.   Disagree

c.   Do not know.

6.   Prompt voiding is when the patient is on a toileting schedule every 2 hours.

a.   Agree

b.   Disagree

c.   Do not know.

Appendix C

Post-Implementation Survey

1. How likely are you to use the 3-Day voiding record to develop individualized voiding

schedules and initiate prompted voiding?

1= very unlikely

2= unlikely

3= neither likely or unlikely

4= likely

5= very likely

2. How likely are you to continue prompted voiding?

1= very unlikely

2= unlikely

3= neither likely or unlikely

4= likely

5= very likely

3. Did you encounter any specific barriers using the 3-Day voiding record and developing

individualized prompted voiding schedule?

a.   ___No, I did not have any barriers, the process went well.

b.   ___No, I did not experience the 3-Day voiding record.

c.   ___Yes, I had the following barrier(s).

(Mark any that apply and how significant the barrier seemed to you- minimal, moderate, high.)

i. _____Understanding how to complete the 3-Day voiding record and develop the plan.

1= minimal   2=moderate   3=high

ii. _____Time needed to complete the 3-Day voiding record

1=minimal   2=moderate   3=high

iii. _____Patient's lack of interest

1=minimal   2=moderate   3=high

iv. _____Patient's lack of understanding

1=minimal   2=moderate   3=high

v. _____Lack of staff assistance for 2+assist or more

1=minimal   2=moderate   3=high

4.   Did you encounter any specific barriers to following and carrying out the individualized prompted voiding schedule?

a.   ___No, I did not have any barriers, the process went well.

b.   ___No, I did not experience any individualized prompted voiding schedules during my shifts.

c.   ___Yes, I had the following barrier(s).

(Mark any that apply and how significant the barrier seemed to you- minimal, moderate, high.)

i.   ___Understanding how to follow or carry out the individualized prompted voiding schedule.

1=minimal   2=moderate   3=high

ii.   ___Time needed to carry out the individualized prompted voiding schedule.

1=minimal   2=moderate   3=high

iii.   ___Patient's lack of interest

1=minimal   2=moderate   3=high

iv.   ___Patient's lack of understanding

1=minimal   2=moderate   3=high

v.   ___Lack of staff assistance with 2+assist or higher

1=minimal   2=moderate   3=high