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Effect of Purposeful Nurse Rounding on Patient Satisfaction

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Effect of Purposeful Nurse Rounding on Patient Satisfaction

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B.S. Nursing, Southern Illinois University-Edwardsville, 2014

A Dissertation Submitted to The Graduate School at the University of Missouri-St. Louis
in partial fulfillment of the requirements for the degree
Doctor of Nursing Practice with an emphasis in Women's Health Nurse Practitioner

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Abstract

Problem Delayed nurse response times in an inpatient setting can have a negative impact on patient experience, and is reflected in patient satisfaction surveys such as The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. The purpose of this project is to improve HCAHPS scores related to “responsiveness” in an antepartum unit.

Methods A prospective observational study designed to improve HCAHPS scores regarding nurse response time conducted as a retrospective and prospective review of data. Results of HCAHPS scores related to “responsiveness”, and actual nurse response times were examined before and after a nurse education tool was implemented.

Results Of 37 (N=37) patients who completed the HCAHPS survey, 20 surveys were collected retrospectively and 17 were collected prospectively. The mean percentage for retrospective Responsiveness HCAHPS surveys was 65.26%. The mean percentage for prospective Responsiveness HCAHPS surveys was 89.68%. Of 957 (N=957) instances of patients utilizing their call light, 527 occurred prospectively, and 437 occurred retrospectively. The two-tailed independent samples *t*-test was not significant based on an alpha value of 0.05, $t(925.34) = 1.66, p = .098$. The two-tailed Mann-Whitney *U* test was not significant based on an alpha value of 0.05, $U = 111454, z = -0.51, p = .611$.

Implications for practice Promoting purposeful rounding and nurse communication education in order to improve patient experience, HCAHPS scores, and nurse response time.

Effect of Purposeful Nurse Rounding on Patient Satisfaction

Nurse response time is an important element of a patient's care experience, as patients are placed in a vulnerable and dependent position during hospitalization (Mitchell, Lavenberg, Trotta, & Umscheid, 2014). Delayed nursing response can lead to safety concerns, such as falls. Additionally, response time to call light alerts are often correlated to patient satisfaction regarding care (Tzeng, 2011). Nurses perform a key role in care quality and patient safety. Anticipatory rounds, such as purposeful nurse rounding, have gained significant attention in the healthcare field as a way to ensure not only patient safety, but also patient comfort (Wright, Suderman, Moyer, Grimm, & Morin, 2018). The Institute of Medicine (IOM) report regarding healthcare quality and safety fueled healthcare organizations to re-evaluate care delivery. Purposeful hourly rounding was adopted in 2006 as a way to improve patient satisfaction scores (Fabry, 2015).

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys patients discharged from the hospital and asks a series of 29 questions regarding their hospital stay. HCAHPS is a standardized survey which publicly reports patient evaluation of their hospital care. It is an instrument specifically designed for measuring patient perception of their hospital experience (Centers for Medicare and Medicaid Services [CMS], 2020). Substantial steps are taken to ensure proper development, testing, and endorsement of the HCAHPS survey from several organizations including the National Quality Forum, the Agency for Healthcare Research and Quality (AHRQ), and the Hospital Quality Alliance (HQA) (CMS, 2020).

The HCAHPS survey not only measures consistency of healthcare service (Lidgett, 2016), but scores also affect hospital reimbursement (CMS, 2020). The HCAHPS survey was developed with three major goals shaping its design. First, it provides an objective and meaningful comparison of hospitals which focus on important consumer topics through the production of data regarding patients' perspectives of care. Next, hospitals are motivated to improve quality of care because the HCAHPS surveys are reported publicly. Last, the public reporting of HCAHPS scores fuels healthcare accountability through transparency of care quality provided in return for the investment of the public. This means hospitals can be compensated with an annual Inpatient Prospective Payment System (IPPS) provision if they gather and submit HCAHPS data (CMS, 2020). Hospitals who fail to publicly report the required HCAHPS survey data may not receive annual payments from IPPS, or may receive reduced payments (CMS, 2020). For patients hospitalized on an antepartum unit, HCAHPS scores fall at/below the 75th percentile for the "responsiveness" category, specifically "call button" and "bathroom help" (PRC Easy View, 2020). Currently, there are no evidence-based interventions implemented on the unit to improve these scores.

Improvement of HCAHPS scores related to "responsiveness" in an antepartum unit is the purpose of this project. The Institute for Healthcare Improvement (IHI) Plan-Do-Study-Act (PDSA) Model is used to guide this study. This quality improvement framework tested a change to determine its effect on the desired outcome (Melnyk & Fineout-Overholt, 2019). The overall aim, or goal, of the project included an increase in "responsiveness" HCAHPS scores related to "call button" and "bathroom help" by 10 percentage points within 4 months on an antepartum unit. A primary outcome measure of

this project included the HCAHPS score for “responsiveness”. A secondary outcome measure was call light response time. The study question for this project is: For patients in an antepartum unit, how does purposeful rounding compared to the reactive practice of waiting for a patient to utilize the call light affect patient satisfaction HCAHPS scores within 4 months of intervention?

Review of Literature

The literature review process for this project involved the use of three search engines, including PubMed, CINAHL, and ScienceDirect. Key search phrases included “improve AND patient satisfaction”, “patient satisfaction AND patient centered care”, and “responsiveness AND nurse AND patient satisfaction”. CINAHL generated 176 publications for the search phrase “improve AND patient satisfaction”. ScienceDirect resulted in 100,441 publications generated for the search phrase “patient satisfaction AND patient centered care”. “Responsiveness AND nurse AND patient satisfaction” generated 2,336 publications from PubMed. Inclusion criteria was added to the refined CINAHL search, counting a publication date of 10 years and an academic journal source type. Exclusion criteria included newspaper articles, letters and personal narratives. The refined CINAHL search for “improve AND patient satisfaction” with inclusion and exclusion criteria resulted in 129 generated publications. The ancestry method was used to obtain two of the sources used in the literature review. A total of 16 publications were selected for the literature review.

It is important for patient care staff to understand the significance of HCAHPS surveys, given that besides the patients, hospital staff are one of the most vital stakeholders in HCAHPS scores. Each employee has an impact on the patient care

experience, therefore education regarding institution HCAHPS scores and patient satisfaction is key (Long, 2012).

Ideally, patients only use call button when they need the nurse, therefore long wait times may have a negative impact on the patient perception of nurse responsiveness. Long (2012) identified the need for a timely call-light answering system, even if the nurse was not readily available. This involved the nurse answering the call light and communicating a plan with a realistic time frame, creating manageable expectations for the patient (Long, 2012). Education and interventions regarding rounding has improved nurses' understanding of the background and significance of the problem, resulting in increased likelihood of adhering to the new interventions of purposeful rounding (Fabry, 2015).

Implementation of intentional nurse rounding is a common key concept throughout the literature. The literature classifies nurse rounding with a variation in rounding specifics. Intentional rounding is identified as hourly nurse rounds (Brosey & March, 2015; Daniels, 2016; Lobatch & Wise, 2019; Mitchell et al., 2014). Intentional rounding is also classified as "4P" rounding, indicating the nurse evaluates patient needs regarding pain, potty, position, and placement every two hours (Blakley, Kroth & Gregson, 2011). In comparison, Middigan, Butler, and Davidson (2019) identify hourly rounding as "hourly contact and support", meaning the nurse is not merely checking on the patient, but makes verbal or physical contact to ensure their needs are met.

Rounding can also be combined with additional methods to improve the patient experience. One study combines hourly rounding with "pod buddies" to ensure shared responsibility when rounding on patients or answering call lights (Nelson & Staffileno,

2017). The strategy behind the “pod buddy” assignment helps promote shared responsibility and teamwork regarding call light response. At the beginning of each shift, every nurse was assigned a staff member partner to assist in answering call lights. This strategy helped increase response times when the primary nurse was not available (Nelson & Staffileno, 2017).

Parallel to pod buddies, a “care zone” model is considered an effective system to improve perception of staff responsiveness related to quality and consistency of patient care (Wyatt, Coogle, & Glenn, 2019). The care zone model assigns staff to a cluster of patient rooms that are all near one another. This is opposed to other frameworks, which based nursing assignments on acuity, not location of rooms (Wyatt et al., 2019). The responsiveness metric of the HCAHPS survey showed improvement after implantation of the care zone method. An additional benefit of this method was a reduction in falls (Wyatt et al., 2019). Positioning patient care staff in close vicinity to their patient assignments helps not only with a reduction in response time, but also has an added advantage to patient safety. Yang, Liu, Huang, and Mukamel (2018) presented similar results, indicating changes in nurse workflow lead to faster nurse responsiveness. Increasing staffing, although not always financially feasible for every healthcare facility, can lead to a more manageable workload and better patient experience regarding nurse responsiveness (Yang et al., 2018).

Adding to the concepts of hospital finances and patient health outcomes, findings indicate hospitalization readmission rates are affected by nurse responsiveness (Yang et al., 2018). Literature suggests a higher quality of care is provided by highly responsive staff, leading to fewer adverse outcomes and prevention of readmissions. Patients who

are more satisfied with their care not only represent lower readmission rates, but also have reduced lengths of stay and are more likely to maintain lasting relationships with their provider. The lasting healthcare relationship means greater adherence to prescribed treatment plans, leading to better patient outcomes (Jun, Stern, & Djukic, 2020). These findings suggest nurse responsiveness is correlated with improved clinical outcomes. This direct relationship between patients and nurses provides a unique and substantial opportunity for nurses to impact the patient care experience (Jun et al., 2020).

Patient satisfaction is the most frequently observed outcome measure throughout the review of literature. Comparisons of HCAHPS scores both before and after purposeful nurse rounding helped identify overall patient satisfaction with care (Blakley et al., 2011; Lobatch & Wise, 2019). The patient experience team on a small medical-surgical unit identified a need for an initiative to improve patient satisfaction through the idea of patient-centered care. Similar to findings from Blakley et al. (2011); Lobatch & Wise (2019), purposeful rounding was tied to improvements on HCAHPS scores (Moorer et al., 2017).

HCAHPS scores can measure several perspectives of patient care including communication with nurses and doctors, responsiveness of staff, cleanliness and quietness of the hospital, communications about medicine, discharge information, overall rating of the hospital, and would they recommend the hospital (CMS, 2020). Daniels (2016) found patient perspective of nurse communication and pain management as a major outcome measure when evaluating patient experience. Mitchell et al. (2014) identified patient satisfaction regarding nurse responsiveness as a key outcome measure.

Nurse rounding can also impact patient safety. The implementation of purposeful rounding leads to a decrease in patient falls (Brosey & March 2015; Daniels, 2016). Increased presence of the nurses during intentional rounding leads to an amplified patient perception of nurse responsiveness (Brosey & March 2015; Daniels, 2016). Further, some studies considered the incidence of call light alerts pre- and post-intervention (Maddigan, Butler, & Davidson, 2019; Nelson & Staffileno, 2017). Similar to falls, call light activations decreased when rounding was completed, indicating an improvement in nurse responsiveness. Since patient needs were anticipated and met, the call light was not needed as often (Maddigan et al., 2019; Nelson & Staffileno, 2017).

Another common theme found in the literature is that of patient-centered communication through the use of call lights. Although not directly addressed in most of the studies, Montie, Shuman, Galinato, Patak, Anderson and Titler (2017) identifies patient-centered communication as a core theme in patient care. Since call light systems are a primary method of communication for patients, they are often associated with overall quality of care. Not only are call lights an effective way to help patients engage in their healthcare but, if used correctly, can also improve satisfaction and safety in the healthcare setting (Montie et al., 2017). Suggestions for improvement in patient understanding and perceptions of call light response time was divided into three subcategories including answering the call light, communicating the patient's needs, and follow through for the request (Montie et al., 2017). The idea of patient-centered communication is further supported through purposeful rounding implementation which promotes effective nurse-patient relationships and positively effects patient HCAHPS

surveys scores regarding patient satisfaction and nurse responsiveness (Lobatch & Wise, 2019).

Overall patient satisfaction improved in several of the publications. Descriptive statistics from patient interviews and HCAHPS surveys was the most common method of analysis used in the review of literature. All studies, with the exception of Brosey and March (2015), displayed an improvement in perceived nurse responsiveness. Blakley et al. (2011) further supported this with the introduction of a “4 P” program. This nurse rounding program helps the nurses anticipate and meet patient need by asking the “4 Ps” during rounding: pain, position, potty, placement (Blakley et al., 2011).

Several strengths in the design of the studies were identified. Anticipatory patient rounding is financially rewarding, as it has been found to decrease harm such as falls, and has resulted in an increase in patient satisfaction, reflected by increased HCAHPS scores (Brosey & March, 2015). Nurse rounding has also promoted better communication among the healthcare team and the patients (Blakley et al., 2011). Some areas of weakness were also identified in several of the publications. Nurse rounding compliance was not consistent (Brosey & March, 2015; Fabry, 2015). Difficulty arose when incorporating rounding into an already established routine (Maddigan et al., 2019). Additionally, only two of the 10 studies evaluated nurse rounding interventions on a mother-baby unit. Findings from the review of literature have helped provide focus for future studies. There is little information regarding the effects of purposeful nurse rounding on women and infant floors, specifically antepartum units. Larger sample sizes on a variation of women’s health floors across several facilities would help validate collected data concerning patient satisfaction regarding nurse responsiveness during

nurse rounding. In addition, better call light technology is needed in order to evaluate frequency of call light and nurse responsiveness once hourly rounding has been implemented.

The IHI Plan-Do-Study-Act model was selected to guide this project. The PDSA cycle was chosen because the process allows for improvement and retrial based on what is learned from changes on a small-trial basis (Melnyk & Fineout-Overholt, 2019). The PDSA cycle contain four stages: planning a change and observation, trying the change in a small setting, analyzing the data and determining what is learned, and refining the change, based on what was gathered, and repeat the testing (Melnyk & Fineout-Overholt, 2019). Based on these steps, various changes regarding purposeful nurse rounding and response to call lights can be implemented to determine the best method for improvement in patient satisfaction regarding “responsiveness”.

Method

Design

This quality improvement project is a prospective observational study designed to improve HCAHPS scores regarding nurse response time and was conducted as a retrospective and prospective review of data. This project was implemented beginning January 11th, 2021, and concluded 12 weeks after intervention, on May 2nd, 2021. Retrospective data including HCAHPS scores for “responsiveness” and nurse call light response times before implementation of practice change were collected from the timeframe of October 19th, 2020 until January 10th, 2021.

Setting

The project was conducted in an 18-bed, high-risk antepartum unit at an urban city hospital. The antepartum unit is located in a 1,200 bed hospital, and is part of the largest nonprofit healthcare organization in the Midwest. A majority of the patient population consists of African American women who reside in the inner-city, are uninsured, impoverished, and medically underserved. The unit consists of approximately 37 nurses split between day and night shift. The average length of stay for patients on the unit is 2.7 days and the average census is 15 patients.

Sample

Based on the outcome measures of this project, the convenience sample included all inpatient antepartum patients who completed the HCAHPS survey from October 19th, 2020 to January 10th, 2021, and February 8th, 2021 to May 2nd, 2021. A convenience sample of call light response times from all patients admitted to the antepartum unit from October 19th, 2020 to January 10th, 2021, and February 8th, 2021 to May 2nd, 2021 was collected to determine the average call light response time. The exact sample size of responses to HCAHPS surveys often fluctuates, as patient census is unpredictable and not all patients will respond to the HCAHPS survey. There were 37 HCAHPS surveys completed during the collection time of this project. In months prior to data collection, an average of nine patients responded each month. This is a decrease in average from previous years as surveys were suspended in April and May 2020 due to COVID-19 (PRC Easy View, 2020). Additionally, patients transferred to (and discharged from) labor and delivery, postpartum, or other units, were, by default, not included in antepartum's HCAHPS scores. Only patients discharged from the antepartum unit were included in the survey.

Approval Processes

Approval for the project was granted by the Antepartum Clinical Nurse Manager and the Patient Experience Partner through the hospital. Approval From the hospital Institutional Review Boards (IRB) was not required as this is a nurse-driven project developed through the Antepartum Unit Practice Council. Approval from the University of Missouri St. Louis (UMSL) IRB and doctoral committee was also obtained. Benefits may include increased nurse response time, increased HCAHPS scores, and an increase in hospital reimbursement from the state should an increase HCAHPS scores be sustained. No risks or ethical dilemmas have been identified.

Data Collection/Analysis

Retrospective data of HCAHPS “responsiveness” scores and call lights response time was collected weekly from October 19th, 2020 until January 10th, 2021 in order to compare to data post-practice change. Similarly, prospective data of HCAHPS “responsiveness” scores and call light response times were collected weekly post-intervention from February 8th, 2021 to May 2nd, 2021. Data was collected using the PRC Easy View analytic software to evaluate the HCAHPS scores regarding “responsiveness” (See Appendix A). The data was separated into subcategories of “call button” and “bathroom help” as that is how it is presented on the HCAHPS survey. HCAHPS scores are recorded as a percentage of times a patient reports they were “always” responded to in a timely manner. Responsiveness is further subcategorized into “call button” and “bathroom help”. The frequency and response time for each patient’s call light was collected and averaged via the Responder 5 and Stanley Badge software system (See Appendix B). Data was documented on flowsheets in a locked computer and saved to a

password-protected external drive. Considering the variables are continuous and numeric, the means of the different outcome variables were measured based on the grouping. Comparison of these means required an independent T test for each of the outcome variables. Data analysis recommendations from Intellectus Statistics data analysis software was taken into consideration once the data was entered into the system.

Procedures

Identification of the problem of nurse responsiveness was brought to the attention of the Antepartum Unit Practice Council by the unit manager. Development of an educational tool and the plan for proper use of Vocera phones and documentation of the “plan of care” discussion with patients into the electronic health record was accomplished with the help of the Antepartum Unit Practice Council.

Education, which progressed in depth each week, was presented by the antepartum charge nurse during each shift change huddle and was available on the unit huddle board. Education began during week 1, on January 11th, 2021, with reminders to log into Vocera phones. The following week, starting January 18th 2021, education was provided to the nurses regarding purposeful rounding. The next week, on January 25th, 2021, nurses were encouraged to address plans for the shift with the patient and document the “plan of care” discussion. Lastly, starting February 1st, 2021, nurses were encouraged to use specific dialogue to address the patient’s perception of a reasonable response time. Charge nurses were notified about the anticipated education in the previous week’s “weekly wrap-up” unit email sent by the unit assistant nurse manager.

Data collection of specific “responsiveness” HCAHPS scores and nurse response time to call lights occurred weekly, both 12 weeks before and 12 weeks after the practice

change. Collection of patient outcome data continued to occur weekly until May 2nd, 2021. Data was obtained from PRC Easy View system, Responder 5 and Stanley Badge System.

Results

There were 37 HCAHPS surveys completed by patients discharged from an antepartum unit. All patients were women, age range and race/ethnicity is unknown, as HCAHPS results viewed through PRC Easyview cannot be traced back to a specific patient. For 12 weeks before the educational tool for nurse responsiveness was implemented, 20 HCAHPS surveys were completed (Table 1). The data outlined in Table 1 is aggregate data obtained from PRC Easyview, and therefore does not require further statistical analysis. Boxes containing no data indicate surveys were not completed or returned. HCAHPS scores are recorded as a percentage of times a patient reports they were “always” responded to in a timely manner. Responsiveness is further subcategorized into “call button” and “bathroom help”. The mean percentage for retrospective Responsiveness HCAHPS surveys was 65.26%, the mean percentage for retrospective “Call Button” HCAHPS surveys was 58.54%. The mean percentage for retrospective “Bathroom Help” HCAHPS surveys was 100%.

For 12 weeks after the educational tool for nurse responsiveness was implemented, 17 HCAHPS surveys were completed (Table 2). The data outlined in Table 2 is aggregate data obtained from PRC Easyview, and therefore does not require further statistical analysis. Boxes containing no data indicate surveys were not completed or returned. The mean percentage for prospective Responsiveness HCAHPS surveys was 89.68%, the mean percentage for prospective “Call Button” HCAHPS surveys was

80.56%. The mean percentage for prospective “Bathroom Help” HCAHPS surveys was 100%. Figure 1 displays the average HCAHPS scores from 12 weeks of retrospective data (blue bars), as well as the average HCAHPS scores from 12 weeks of prospective data (grey bars).

There were 957 nurse response time instances recorded on Responder 5 in which time was recorded between the time a patient activated the call light and the time the nurse entered the patient room (N=957). Five hundred twenty of the instances occurred during the 12 weeks before the education tool was implemented (from October 19th, 2020 to January 10th, 2021). Four hundred thirty seven of the instances occurred during the 12 weeks after the education tool was implemented (from February 8th, 2021 to April 16th, 2021). The result of the two-tailed independent samples *t*-test was not significant based on an alpha value of 0.05, $t(925.34) = 1.66, p = .098$. This finding suggests the mean of time (in seconds) was not significantly different between the retrospective (R) and prospective (P) categories of the educational intervention tool. The results are presented in Table 3. A bar plot of the means is presented in Figure 2.

A two-tailed Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in time (seconds) between the levels of education of the nurses regarding responsiveness (retrospective and prospective). The result of the two-tailed Mann-Whitney *U* test was not significant based on an alpha value of 0.05, $U = 111454, z = -0.51, p = .611$. The mean rank for group R (retrospective) was 474.83 and the mean rank for group P (prospective) was 483.96. This suggests that the distribution of time (seconds) for group R ($Mdn = 38.50$) was not significantly different

from the distribution of time (seconds) for the P ($Mdn = 38.00$) category. Table 4 presents the result of the two-tailed Mann-Whitney U test.

Discussion

The purpose of this project was improvement of HCAHPS scores related to “responsiveness” on an antepartum unit. The overall aim, or goal, of the project was an increase in “responsiveness” HCAHPS scores related to “call button” and “bathroom help” by 10 percentage points within four months on an antepartum unit. Although the average HCAHPS score for “bathroom help” remained at 100% before and after unit education was implemented, the average scores for both “responsiveness” and “call button” improved by more than 10 percentage points after education implementation on the unit. “Responsiveness” increased by 24.42 percentage points, and “call button” increased by 22.02 percentage points. Based on the comparison of the HCAHPS scores, it is likely the nurse education intervention may have impacted the study question: For patients in an antepartum unit, how does purposeful rounding compared to the reactive practice of waiting for a patient to utilize the call light affect patient satisfaction HCAHPS scores within 4 months of intervention?

Despite the increase in “responsiveness” scores and “call button” scores, the data comparing actual nurse response time in seconds suggests there is no statistical difference between nurse response time before and after unit education was implemented. The education and conversations nurses conducted with patients over the second 12 weeks may be a potential reason for the discrepancy in HCAHPS versus actual response time. Although there was not a statistically significant difference in actual nurse response time, it is possible the intervention provided the patients with a realistic expectation of the

nurses, and changed the patient perception of nurse response time (reflected in the HCAHPS scores). Another potential reason for the discrepancy between the primary and secondary outcome measures can be the difference in N. The total number of HCAHPS surveys conducted was 37. The total number of nurse response times measured was 957. The amount of nurse response time data was significantly larger than that of the HCAHPS surveys. The significant difference is likely due to response times being recorded after every patient activated the call light, meaning several response times could be recorded for just one patient. However, HCAHPS scores are conducted only once per admission, if the patient is randomly selected.

Strengths of this study include a purposeful and consistent sampling of nurse response time through the unit Responder 5 and Vocera call light systems. Some limitations of the project include the low number of HCAHPS surveys collected. Although data collection ended on May 2, 2021, surveys can take several weeks to be conducted, collected, and analyzed through PRC Easyview system. Additionally, it was discovered some nurses were not wearing their tracker badges, which assess response time (or the battery was dead). Lastly, not every patient discharged from the unit is contacted for HCAHPS surveys. A smaller, random sample of discharged patients are contacted for the HCAHPS surveys. It is likely patients in negative pressure rooms who were treated for Covid-19 may have experienced longer nurse response times, due to the need for nurses to don personal protective equipment before entering the room.

Currently, only patients discharged from the antepartum unit are surveyed for HCAHPS. However, most antepartum patients are transferred to labor and delivery and postpartum before being discharged, meaning patients who spend weeks to months on

antepartum may not be able to participate in antepartum HCAHPS surveys. In the future, the nurse education intervention could be applied to all units within the women and infants division and the efficacy could be evaluated throughout the division. Additionally, the education model could be applied to other inpatient specialties, or can be adjusted to address other weak areas in unit HCAHPS scores.

Conclusion

While the measured change in nurse response time post intervention was not statistically significant, it is reasonable to assume response time perceived by the patient improved after nurse education improved based off of the HCAHPS results regarding “responsiveness” and “call button”. Average scores for “responsiveness” and “call button” improved by over 10 percentage points prospectively. The nurse education intervention is easily amendable and is flexible enough to be implemented on other units and in other healthcare settings to help improve a variety of patient care needs and patient experience.

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Appendix A

Table 1

Retrospective Weekly HCAHPS Scores (%)

Week:	Responsiveness	“Call Button”	“Bathroom Help”
<i>October 19th, 2020</i>	-	-	-
<i>October 26th, 2020</i>	-	-	-
<i>November 2nd, 2020</i>	66.87	33.33	100
<i>November 9th, 2020</i>	-	-	-
<i>November 16th, 2020</i>	-	-	-
<i>November 23rd, 2020</i>	80.2	60	100
<i>November 30th, 2020</i>	0.2	0	-
<i>December 7th, 2020</i>	100	100	100
<i>December 14th, 2020</i>	0.2	0	-
<i>December 21st, 2020</i>	100	100	-
<i>December 28th, 2020</i>	75.2	75	-
<i>January 4th, 2021</i>	99.4	100	100

Table 2

Prospective Weekly HCAHPS Scores (%)

Week:	Responsiveness	“Call Button”	“Bathroom Help”
<i>February 8th, 2021</i>	74.4	50	100
<i>February 15th, 2021</i>	-	-	-
<i>February 22nd, 2021</i>	99.4	100	-
<i>March 1st, 2021</i>	99.4	100	100
<i>March 8th, 2021</i>	99.4	100	100
<i>March 15th, 2021</i>	86.9	75	100
<i>March 22nd, 2021</i>	-	-	-
<i>March 29th, 2021</i>	99.4	100	100
<i>April 5th, 2021</i>	74.4	50	100
<i>April 12th, 2021</i>	74.4	50	100
<i>April 19th, 2021</i>	99.4	100	-
<i>April 26th, 2021</i>	-	-	-

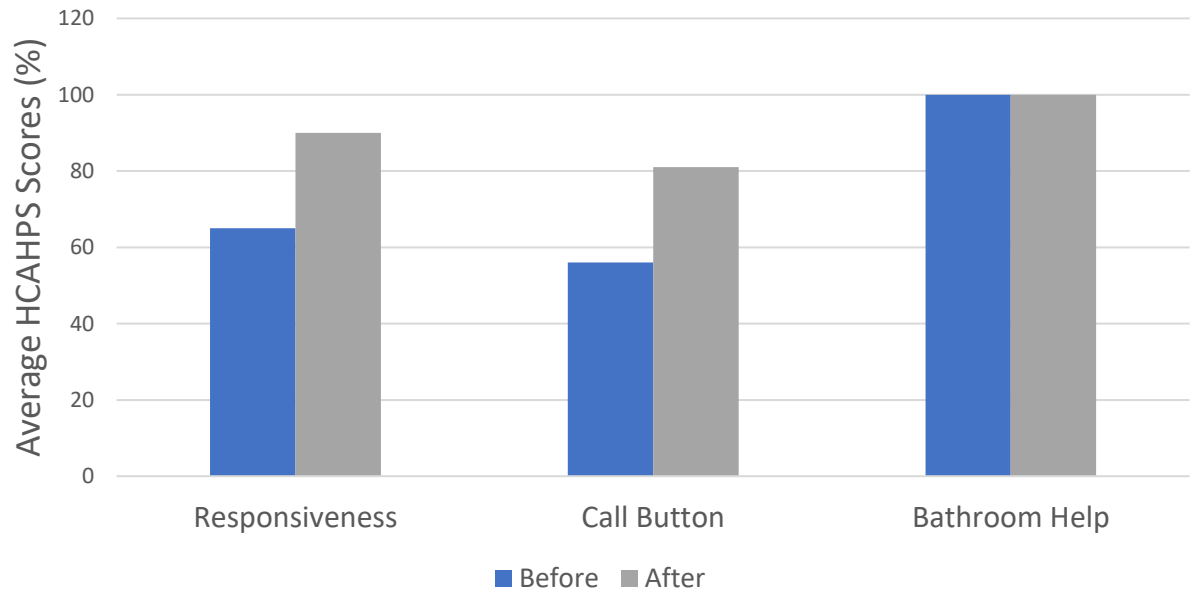
Appendix B**HCAHPS Scores (%) Before and After Education Intervention**

Figure 1. Average HCAHPS score percentage before the educational intervention is displayed by the blue bars. Average HCAHPS score percentage after the educational intervention is displayed by the grey bars.

Appendix C

Table 3

Two-Tailed Independent Samples t-Test for Time (seconds) by Education Tool

Variable	R		P		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Time (seconds)	70.81	126.54	59.24	88.39	1.66	.098	0.11

Note. N = 957. Degrees of Freedom for the *t*-statistic = 925.34. *d* represents Cohen's *d*. R = retrospective, before education intervention. P = prospective, after education intervention.

The mean of Time (seconds) by levels of Education (Retrospective and Prospective)

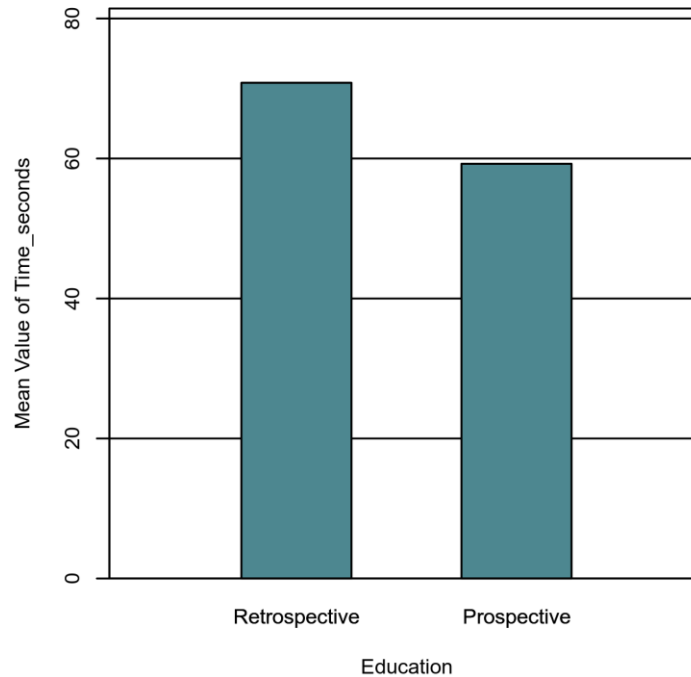


Figure 2. The “Retrospective” bar indicates mean nurse response time in seconds before the educational intervention. The “Prospective” bar indicates mean nurse response time in seconds after the educational intervention.

Appendix D

Table 4

Two-Tailed Mann-Whitney Test for Time (seconds) by Education Tool

Variable	Mean Rank		U	z	p
	R	P			
Time (seconds)	474.83	483.96	111454.00	-0.51	.611