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Comparison of the Nursing Student's Perception in their Ability to Recognize a Change in Patient Condition Using the Patient Risk Detection Theory in a Simulated Environment

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Abstract

Nursing students in simulation often become preoccupied with alarms on the patient's bedside monitor, failing to reassess the patient, or do not correlate monitor alarms with the patient symptomology, pathophysiology or treatment. This project compared 17 second semester nursing students self-reported perception of their ability to recognize and act on a patient condition change, with Meti-Vision data coding software for actual recognition and action time in real time during the scenario. Three scenarios were created with patient condition changes (Phases) on 3 minute intervals. Students were placed in groups of 2 with 12 total coded groups, each student group received at least 2 patient condition changes. Post simulation the nursing students completed a survey self-reporting 7 areas of perceived changes recognized and/or actions performed. The data coded was analyzed in minutes and seconds and placed in an Excel spreadsheet and imported into SPSS version 16 to obtain descriptive statistics.

Keywords: Nurse. The nurse is collectively defined in this paper as a student nurse or a novice, licensed new graduate nurse. Novice and student nurses often experience similar anxieties, knowledge and skill deficits when caring, identifying or anticipating patient needs based on patient symptomology.

Introduction

Acute patients in an acute setting often present with varied symptomology. The ability to identify abnormal symptomology, correctly assess care priority and correlate findings are imperative to appropriately communicating patient needs. The nurse should recognize abnormality, perform or focused assessment, anticipate patient needs, prepare for individualized intervention and communicate findings.

There are several acronyms and protocols widely used to facilitate the nurses' ability to treat patient condition changes and identify highest patient priority (ABC's, chest pain and DVT prophylaxis) American College of Chest Physicians, 2012, American Heart Association, 2012, Yakima Valley Memorial Hospital, 2009). Acronyms and protocols assist nurses to act now and clinically reason later. The act now approach fails to promote clinical analysis of why or what caused the abnormality, potentially masking the underlying cause. An abnormal assessment system may or may not identify where the abnormality originates, unless further assessment and intervention is completed.

Protocols and acronyms fail to promote clinical reasoning, treatment anticipation and evaluation of intervention(s). The protocol or acronym becomes the intervention instead of tools or guidelines to facilitate the nurse's ability to analyze why the patient's condition changed. The student nurse's ability to identify a change in a patient condition promotes more accurate and effective treatment, intervention and communication to the healthcare team.

Problem Statement

Nursing students have difficulty identifying the underlying cause of the patient's symptom(s), usually rooted in the patient's history or disease physiology. A systematic process is needed for student nurses' to learn how to timely recognize changes in patient condition, communicate findings and anticipate patient care needs.

Purpose of the Project

The utilization of the Patient Risk Detection Theory as a teaching methodology in undergraduate nursing pre-licensure simulation increased 17 nursing students' ability to recognize changes in patient condition [1]. The timely recognition increased the student nurse's perception of ability to implement the needed intervention(s), perform a system focused assessment, anticipate treatment or provide effective communication about patient needs. Nursing students used the communication acronym SBAR in a simulated environment. SBAR stands for situation, background, assessment and recommendations.

The project focused on the nursing student's ability to accurately report findings using all components of the SBAR acronym, consistently and concisely. Nursing students were recorded and data coded on whether SBAR was used to communicate with the healthcare provider and what components were most often relayed to the healthcare provider.

Overall goal

To compare the nursing student's perception(s) with a questionnaire and data collected by the primary investigator during a recorded simulation. The analysis provided a qualitative and quantitative comparison between student perception and actual actions, interventions and communications. The data collected was compared by the primary investigator (PI) to the self-reported questionnaire given to the nursing students post simulation, describing the nursing student's perception of when (actual time in the scenario) the nursing student recognized a change in patient condition.

Clinical Significance/Policy Implications

Skills taught in nursing school are often the focus of teaching and learning in clinical rotations and the simulation arena [2]. The emphasis on skill places the cognition of what, how and why the skill is ordered or required for the patient as a lesser priority, and sometimes an afterthought. Nurses may become dependent on the knowledge and competence of other co-workers, physicians, protocols, standing orders and healthcare team members to consult or troubleshoot abnormalities. The lack of knowledge and clinical reasoning when a change in patient condition occurs can be dangerous, and holds legal ramifications for the nurse, patient and the facility.

Patient safety is at risk (19 billion dollars in medication errors, 1999), nursing licensure is at risk (3.5 billion dollars in loss of productivity, 2012), and the perception of incompetence is a risk. When student nurses and licensed nurses cannot timely identify patient changes the patient may be at risk for error or complication [3].

The complexity of healthcare continues to advance, forcing nurses to specialize in a specific population area [4]. Time is a factor; a nurse must have adequate time to clinically reason and still provide timely and safe care. Due to the complexity of patient acuity the nurse's time is limited. However, if the nurse's expectation is to learn when to report a patient condition change, what components and order are a necessity in communicating to the healthcare provider, how to anticipate needs, educate and know how to best utilize resources? The implementation of a proven theoretical framework may improve the early recognition and early communication.

There is a needed change in nursing education to move away from skill performance and increase the focus towards deep clinical reasoning. The Patient Risk Detection Theory focuses on the nursing student's ability to identify abnormalities in assessment trends [1]. The ability of the student nurse to identify change may assist the nursing student to better prepare and anticipate patient needs and intervene. The theory enhances opportunities for the student nurse to become a trusted resource in communicating patient needs.

Theoretical Framework

Pat Benner's Novice to Expert Theoretical Framework identifies that nurses build knowledge through foundational education, exposure and experience [5]. Benner's theory uses five stages to explain how nurse's gain knowledge and experience: novice, advanced beginner, competent, proficient and expert. Simulation provides an atmosphere where learning can take place without patient risk. Simulation decreases the risk of legal liability and provides a safe environment for student nurses to learn from mistakes, understand what is known and what performance gaps apply [6]. Simulation provides nursing students with repeated exposure to a variety of diagnoses, prognosis, treatment, ethical dilemmas and nurse induced complications. Simulation can provide experience and exposure student's do no experience in theory or clinical rotations without legal ramification. Benner's theoretical framework provides an excellent medium to explore and evaluate the student's cognition, nursing action and communication ability based on the novice to expert scale.

Figure 1 illustrates Benner's Theoretical Framework

In simulated environment nursing students first learn rules and foundation of practice. Once a strong foundation is developed nursing students begin to apply rules. However, in early development the rules of practice are applied loosely and globally as nursing students cannot clinically reason why certain diagnoses call for specific nursing or physician interventions [5]. At the novice level application and clinical reasoning are rigid as principles and expectations are learned. Knowledge is gained by repeated exposure and reoccurring significant events. As the student nurse is repeatedly exposed to theory, treatment and legal procedure nursing students can begin to, "demonstrate an acceptable performance" of skill, knowledge and application [5].

In simulation a nursing student is often exposed to new experiences that build upon known competencies gained through theory or clinical exposure. Student nurses' begin to relate past experience and known knowledge to current experience.

Figure1: Benner's Theoretical Framework

Source: Kaminski J (2010) Theory applied to informatics – Novice to expert. Canadian Journal of Informatics, 5(4) p. 967. Retrieved from http://cjni.net/journal/?p=967 June 27th, 2013. [7]

Literature Review

The use of simulation is widely known and used in nursing as a new methodology to provide quality and controlled education for students without creating risk for the patient [6]. However, there continues to be an inconsistency among many nursing programs surrounding the purpose of simulation in each program, the type of tools, guidelines and theories implemented [8, 9]. Some programs

use simulation specifically for psychomotor based activities or skill pass offs. Other programs use high/low fidelity simulators or standardized patients, computer based virtual-reality modules, for clinical remediation or as a percentage of clinical hours. Finally, some programs use simulation to assist the students to evaluate the student's ability to combine theoretical knowledge with clinical application [10, 11].

Clinical Relevance of Nurse Ability to Anticipate Patient Needs

Confidence testing throughout the literature continues to be the most widely evaluated portion of simulation. The reader may deduce that if a nursing student has confidence in nursing skill and thought process ability, that student nurse is less likely to create or make an error. The Institute of Medicine wrote a report to congress titled, "To Err is Human" (1999) [3]. The report discussed a proposal to decrease medication error by 50%, which costs 3.5 billion dollars yearly [12]. Twenty-five percent of all medication tasks are completed while the licensed nurse is multi-tasking; the average nurse performs 72.3 tasks per hour with a mean task length of 55 seconds [13]. The likelihood of creating more time for a student nurse or licensed nurse to clinically reason and decrease error is unlikely. However, teaching student nurses prior to graduation consistent strategies to quickly identify changes and anticipate needs may improve the student nurse's ability to detect or prevent errors or complications in the future.

Applicable Tools, Guidelines and Theories

Multiple theories, guidelines and tools (TGTs) have been created to measure simulation. The most widely used taxonomies are Fink (2003) or Bloom's (1956) taxonomies which evaluate learning domains. Fink and Bloom assist the educator to create scenarios based on the end objectives and evaluate the nursing student's ability to identify, analyze, apply and synthesize information [14, 15]. Benner (2010), Bandura (1991), Kolb (1984), Stokols (1996) and Tanner (2006) all created theories that have been used or are used currently in simulation [6, 16-19].

The theories surround social cognitive application to concepts. The theories also guide the nursing student's ability to learn through recognition, advanced debriefing and simulation scenario escalation or continuation. The nursing student's repeated simulation experience increases success, sensitivity of abnormality detection, cultural effects on behavioral outcomes and ability to be successful if other team members' successes are observable [16].

The Signal Detection Theory was developed to assist in simulation settings. Despins, Scott-Cawiezell & Rouder added to the Signal Detection Theory by creating the Patient Risk Detection Theory [1]. The signal detection theory focuses on the decision-making processes student nurses use to identify interventions, treatments, priorities and patient needs.

High Reliability Theory [1] evaluates the facilities or institutions ability to provide a safe environment for the nurse and the patient. High Reliability Theory evaluates what systems are available to support the nursing and patient needs, how sensitive a facility or system is on stress, burn out and workload, and how well equipped systems can create a supportive environment (i.e. safety, medication error or reporting). The ability for an institution to create reliable measures decreases the likelihood of error and increases the likelihood for nursing to reliably identify change in patient condition.

The Patient Risk Detection Theory

The Patient Risk Detection Theory incorporates both signal detection and organizational structure which may assist or inhibit the nurse's ability to accurately identify/anticipate patient condition change and the patient needs from a variety of internal and external distractions [1]. The theoretical framework is used to compare the nursing student's ability to recognize a change in patient condition, with the nursing student's perception of care given (Figure 2).

Problem Applicability to Clinical Decision Making

Identifying patient condition change and anticipation of patient needs based on patient symptomology is a foundational nursing concept. However, the patient symptomology change concept is often complicated with advanced disease process, timely communication with other healthcare team members and carrying out patient and physician ordered tasks. Student nurses need a basic to intermediate level of physiologic and pathologic knowledge to identify

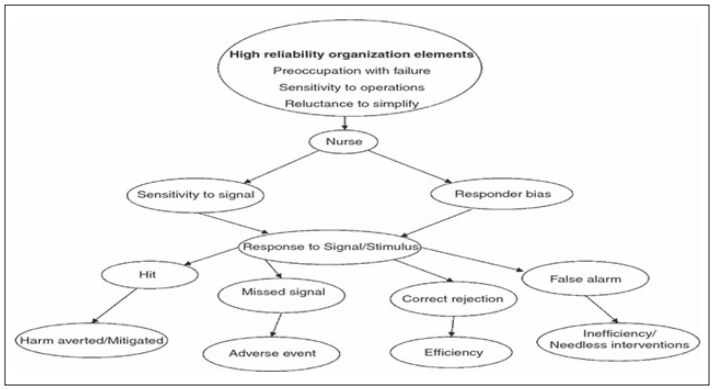


Figure 2: Detection of patient risk by nurses: a theoretical framework

Source: Despins L A, Scott-Cawiezell J, Rouder JN (2010) Detection of patient risk by nurses: A theoretical framework. Journal of Advanced Nursing 66: 470. DOI: 10.1111/j.1365-2648.2009.05215.x. Retrieved June 27th, 2013 from http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2648.2009.05215.x/full#f2

changes and anticipate needs. The student nurse also needs foundational and experiential knowledge to implement interventions, know when to obtain assistance and what to include when providing an SBAR report to the healthcare provider

Communication, safety and assessment are key components of nursing education and clinical competence. Common discussions among student nurses' identify that experience and consistency in a specific population provides the student nurse the opportunity to understand the flow of the unit. The student nurse can learn expectations and anticipate needs based on repetitious activity and familiarity with healthcare provider personalities and likes/dislikes. When a student nurse is confronted with a patient from a different population or a new healthcare provider, anxiety often ensues.

Application of a clinical reasoning theory when analyzing why or when the patient's condition changed or preparing for next steps is invaluable to patient safety. Faculty frequently ask nursing students, "Why?" Why is a current treatment/intervention/diagnostic best for this patient? The process of asking questions often triggers responses like, "that's a normal order here on this floor," or "because the physician ordered it." A follow-up question of, "Why," promotes

the clinical/simulation instructor with the ability to evaluate if the student nurse understands the rationale for treatment. Also the clinical/simulation instructor can analyze if completing the task is based on experience and repetition, or knowledge and rationale for implication.

The use of simulation for identifying when, how or what the student nurse did to illicit or recognize a patient condition change allows the evaluation and self-evaluation of knowledge, clinical reason ability and performance gaps. The use of simulation provides the simulation instructor with the ability to control and adapt the situation or scenario to the nursing students' needs, objectives or learning level, creating a foundation for operational thought [20, 21]. Future research may involve a follow-up of students using the Patient Risk Detection Theory in the clinical realm.

Current Practice & Evidenced-based Research

There is currently no consistent practice in nursing for the utilization of simulation as a teaching methodology [9, 22, 23]. However, there is an abundance of evidence-based research in simulation that identifies simulation effectiveness in certain areas. The purpose of this review was to identify current trends in simulation and research associated with different aspects of simulation, consistent and supported the applicability of the completed project.

Simulation implementation and theoretical frameworks (if utilized) are specific to the nursing program, level of students (diploma, associate, baccalaureate, graduate and post-doctoral). Gantt, (2010) evaluated the facilitator's experience and education in simulation methodology [24]. Decker, et al. (2011), Jensen (2013), McNeill, Parker, Nadeu, Pelayo and Cook, (2012), discussed the importance of faculty and institution buy-in for the long-term evaluation of simulation effectiveness [20, 25, 26]. Endacott et al. (2012), Giesen et al. (2007), Leonard, Shuhaibar and Chen (2010), discussed how the use of simulation fidelity may increase or decrease the reality students experienced during the simulation [27-29]. Morrison and Cantazaro (2010), Buckley and Gordon (2011), Arriaga, et al. (2013), Nickless (2011) and Paulson (2011), identified how curriculum development, support staff and overall fit for the program increased or decreased the effectiveness of the implementation and acceptance of simulation [21, 30-33].

The project focused on the comparison of nursing student's perception in their ability to recognize a change in the patient condition using the Patient Risk Detection Theory, verbalize interventions implemented and recommend interventions and orders to the physician through SBAR communication. The simulated environment consistently controlled the experience and objectives providing a like experience for multiple student nurses over multiple evaluation days. The evaluation of the theoretical framework in simulation as a teaching methodology directly applies to the nurse's ability to quickly and effectively identify changes in patient condition and make accurate recommendations to the healthcare team.

The focus compared perceptions between coded data during the simulation and self-reported perceptions completed post scenario by the nursing students. Clinically, the project prepared nursing students to understand the importance of early detection and communication. The project also prepared nursing students to understand the why behind the actions taken in the clinical environment and improve clinical reasoning.

Project Implementation

Pre-simulation orientation was given to the students two weeks prior to the simulation experience. Nursing students were consented explaining objectives, procedures and gave consent to be recorded. The nursing students were given the demographics of the patient, past medical history and current and past medications and information on the Patient Risk Detection Theory. Immediately pre-simulation on the day the students were scheduled, a checklist was verified of students consented and not consented, and all students consented.

Using the Patient Risk Detection Theory and commonly missed assessments found within the literature search, the primary investigator created 9 phases and 3 scenarios that the nursing students experienced on each of the four simulation days. The Med/Surg II nursing students were in their first simulation experience for the semester and completed the scenarios in pairs of two, except for one group with an odd number of students. Each pair of nursing students completed one scenario or three phases (Average of 6 students per simulation day, with a target goal of 15-25 nursing students. A total of 17 students completed the project). The scenarios provided subtle physical patient changes, created on a timer, to make coding and time stamping easier and more consistent. The scenarios were created utilizing MUSE software and CAE's Meti-Man and Meti-Vision human patient simulator and video technologies. The scenarios were recorded and stored on a secure drive to be re-analyzed post simulation day and coded for consistency.

Each scenario had three phases that correlated to a physical change(s) that progressively worsened as the patient and simulation progressed. Each phase of the scenario was closely monitored and timed for approximately three minutes, once the student reached the three minute mark, the next phase continued to unfold, regardless of treatment or intervention to maintain consistency throughout the study. The final phase of the scenario lasted longer than three minutes as the nursing student varied in time taken to call and give SBAR to the healthcare provider for orders, interventions, diagnostics or assistance.

During the simulation, there were two data collection coders, the primary investigator and the faculty research assistant. The primary investigator data time-stamped when the nursing student recognized a patient change (in minutes and seconds), what interventions were completed and what components were communicated to the healthcare team. The research assistant monitored the operations of the mannequin, including vitals, time in the scenario and was in charge of making sure the scenario progressed to the next phase at the same time in every scenario.

The three scenarios and nine phases shared collective objectives to:

a. Perform a focused cardiovascular assessment.
b. Perform a focused pulmonary assessment.
c. Verbally announce when a change in patient condition has been identified.
d. Verbally describe and perform appropriate nursing interventions.
e. Use SBAR to communicate with healthcare team.

Each successive phase continued from the last phase completed; nursing students (2) within the simulation completed a questionnaire immediately post simulation experience. A small room was provided for to the nursing students to separate the nursing students away from peers. The room was provided to the student to allow student

reflection and self-evaluation as the students answered the questions on the student questionnaire. After the student questionnaire was completed, a brief debriefing was performed to allow the nursing students to analyze actions, interventions, and communications, and prepare the next two students for the next scenarios.

Evaluation

A total of 17 undergraduate, associated degree seeking nursing students completed the implementation. Data was analyzed, compiled and documented in Excel and then imported into SPSS version 16 for descriptive statistics output. Three areas of interest were identified. The first area surrounds the first objective of the project: to identify time in minutes and seconds nursing students took to recognize change in patient condition. Twelve groups of nursing students, 2 per phase, completed each scenario. Table 1 identifies that of the12 groups only 8 groups recognized a change in patient condition, while only 4 of the 12 total groups took action/intervention for the change in patient condition. The mean time for phase 1 was 4:33 with a standard deviation of 0:54 seconds. The 4:33 was 1:33 seconds post change in patient condition. However, there is an immediate correlation with change recognition and implemented action in phase 1.

Phase 2 data identified the same number of groups (8) recognized the change but a higher number of groups (7) took action. Possibilities for these results may include the observing nursing student's ability to accurately identify interventions to be given for current patient symptomology or past experience or exposure with patient condition, prior to the nursing student's simulation experience. Also, the mean and standard deviation time decreased between recognition and action, comparatively to phase 1. Phase 3 had a significant drop in nursing student recognition which further decreased the number of groups that took action. However, only 8 of the 12 groups received a 3rd phase, as only 2 of the 3 scenarios had 3 phases.

Table 1: Time to Recognize Change in Patient Condition

Phase	Notice Change n (%)	Time** mean (sd)
change in patient condition (1)		**3 minutes**
recognition of change	8 (66.7%)	4:33 (0:54)
take action	4 (33.3%)	4:33 (0:32)
increase change in patient condition (2)		**6 minutes**
recognition of change	8 (66.7%)	6:23 (0:18)
take action	7 (58.3%)	6:47 (0:35)
increase change in patient condition (3)*		**9 minutes**
recognition of change	3 (37.5%)	9:12 (0:8)
take action	2 (25%)	9:08 (0:1)

*only 8 of 12 groups had 3rd change
** time is given in minutes and seconds (mm:ss)

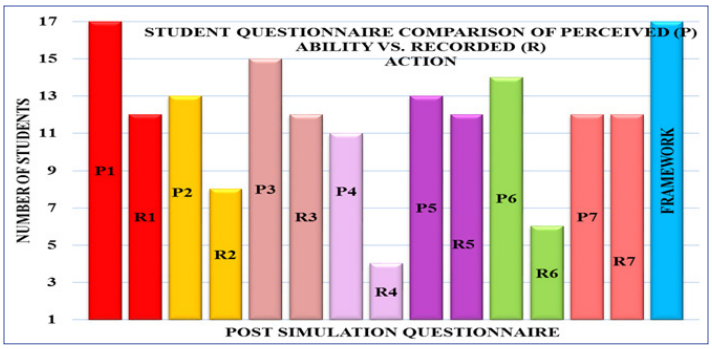
The second area of interest was the variation in communication patterns using the SBAR acronym (Table 2). Only 2.6 groups or 1.6% used all components of SBAR communication during report. The highest recorded acronym used was R for recommendation given to the healthcare team during communication, totaling 8 groups or 66.7%. The lowest recorded acronym used was B for patient background totaling 5 groups or 41.7%. The recorded results identified 10 different patterns to the SBAR communication, identifying that no nursing student group performed the correct method of reporting and reporting was inconsistent, redundant or completely absent.

Table 2: Communication Patterns of SBAR

Group	S	B	A	R	Total	Pattern
1	1	1	1	1	4	ABASR
2	1	1	1	1	4	BSAR
3	1	1	1	1	4	SABRA
4	1	0	1	1	3	SAR
5	0	0	0	1	1	R
6	0	0	0	1	1	R
7	1	1	1	1	4	SABSR
8	0	0	0	0	0	
9	1	0	1	1	3	SARA
10	1	0	1	1	3	BAR
11	1	1	1	1	4	SABSR
12	0	0	0	0	0	
Total	8 (66.7%)	5 (41.7%)	5 (41.7%)	10 (83.3%)	2.6 (1.6)	10 (83.3%)

Finally, a qualitative analysis was completed analyzing the nursing student's self-reported, perceived ability through the nursing student's completed questionnaire immediately following each simulation phase. The nursing student pair was asked 8 individual questions. Table 3 identifies the nursing student's self-recorded perception on the questionnaire versus recorded data coded through Meti-Vision software.

Table 3



Significant areas were:

- Perception 1: Actions performed
- Perception 2: Symptoms recognized in patient condition change
- Perception 4: Interventions completed prior to healthcare provider notification
- Perception 6: Verbal recommendations communicated

Positive perception correlations identified:

- Perception 3: Assessments completed prior and post recognition
- Perception 5: Physician orders requested
- Perception 7: Use of SBAR acronym for communication
- Framework: 100% Perceived success in implementing theory

Discussion

The results imply multiple things, but also have several limitations. The areas of interest are time taken to recognize change in patient condition, action or intervention taken post recognition, perceived data versus recorded data and components of SBAR communication reported.

Time taken to recognize and act on patient condition change identified several questions. How are nursing schools evaluating if the nursing student can apply theory to practice? Is the time frame of nursing school reasonable to expect the nursing student to competently recognize basic changes in patient condition? At what point in a student nurse or nurse's career is there an expectation that the student or nurse could recognize change in a patient condition. At what point does the nurse become competent to identify patient condition change and act in a timely matter?

The perceived data versus the recorded data identified a significant incongruence between nursing student perception and recorded data in four areas: actions performed, symptoms recognized, interventions completed and SBAR components communicated. The fact that these areas show the highest contrast is concerning. The stated areas are key components of nursing curriculum.

The rationale for the contrast could be the nursing student's inability to apply theory to practice, ineffectual curriculum providing tangible information that is usable and applicable for the nursing student, ineffectual teaching or others. Exclusion of foundational courses such as pathophysiology, microbiology and chemistry consistent with proprietary nursing programs could play a role in the lack of foundational theoretical knowledge. However, whatever the reason, the contrast in the stated areas is concerning, as assessment, intervention and communication are known core areas needed to be a successful, competent and a safe basic practitioner.

The nursing student's ability to communicate effectively or ineffectively stems from the nursing student's ability to recognize change, assess abnormality, provide basic intervention, evaluate effectiveness of the intervention and report findings. The inability of the nursing student's in this project to timely recognize and treat change in patient condition directly applies to the nursing student's ability to communicate effectively. How can a nursing student communicate effectively if the nursing student does not have all of the needed components to communicate? However, the nursing student participants have been taught the components of SBAR communication since the foundational nursing courses nearly three semesters prior. The SBAR components of communication have been a core piece of curriculum in each semester. Why then do the results identify significant gaps in SBAR communication, use of all components and consistency?

Limitations

The nursing students that participated in the project were a convenience sample. The nursing students knew the primary investigator and about half of the cohort had worked extensively in clinical, simulation and theory with the primary investigator. Given this fact, the nursing students knew the expectations for the project, based on the prior knowledge and expectations of the primary investigator as a clinical instructor, simulation facilitator and theoretical professor. Because of the prior experience, these participants may have risen to a higher standard or expectation than a blind group that had no experience with the primary investigator.

Secondly, realism is a common thread often discussed in simulation literature. The ability for the nursing student to suspend reality, regardless of the nursing instructor or scenario can be difficult. To completely understand and evaluate the statistical analysis between perception and recorded data a few areas need to be considered. Most simulation scenarios are developed in small intense segments. Meaning the nursing student performs a focused assessment, completes a simple intervention and communicates SBAR to the physician, and then the scenario typically ends. If an intervention is ineffective or the patient continues to deteriorate the nursing students can stop the scenario anytime the nursing student feels uncomfortable (safe environment) or when the objectives of the scenario have been completed. The repetition of intervention, communication and stop scenario become so ingrained into the nursing student that if the scenario continues, often the nursing student struggles to identify the next step, without assistance.

The scenarios in the project were developed after the pattern of assessment, intervention communication and stop, however, unlike other scenarios, the pattern escalated, required specific treatment, specific communication and accurate assessment. Also, there were distractor symptoms built into the scenario to evaluate if the nursing student would treat the symptom or if the nursing student could identify the underlying cause.

The nursing student's inability to be consistent when using SBAR is consistent with the realism discussed. The patient background was the lowest reported of the 12 groups at 41.7%. When the nursing student calls the healthcare team in simulation, the simulation facilitator (the project's primary investigator) answers the phone regardless of the reason or the department the nursing student is calling. The nursing student knows that the primary investigator developed the scenario and knows the most about the scenario, the ability for the nursing student to suspend reality and discuss the patient background could be limited based on known knowledge. However, the inconsistency of number and pattern of SBAR usage does not correlate with competence in effective use of SBAR communication.

In simulation the nursing student is required to quickly learn the nursing role in acute episodes and is empowered to make decisions on what care, interventions or communications must be completed to improve patient symptomology. The nursing student learns the importance of educating the patient, being a patient advocate, and the necessity of accuracy when administering medications, completing procedures or collaborating with other healthcare professionals to solve patient concerns.

Despite the nursing students' level of education (final year of nursing school) and proven competence through clinical and theory a period after advancement and a capital the project results identified concerns with the nursing student's ability to utilize SBAR, perform focused assessments, recognize change, provide timely interventions and communicate appropriate needs.

How can an improved curricular design, increased rigor or change in teaching approach assist nursing students to become more successful in communicating, intervening and recognizing change in simulation, as well as the clinical environment? Guidelines must be tested, practice must be pushed to continually improve quality of care and

promote the most advanced and evidenced-based practice guidelines for the patient populations served.

Simulation provides a learning environment where nursing students can apply learned theoretical concepts in a practical and safe environment. Nursing students learn what is required to become a leader at the patient bedside, within a team and among peers. Nursing students can apply psychomotor and clinical reasoning skills to promote life saving measures, prevent error and provide education to patients and families across the life span. Nursing students learn to care for patients in simulation using the most up to date clinical practice and research, and care for patients with vision and passion to promote health and prevent disease [34-38].

Conclusion/Implications for Practice

Timely recognition of patient change recognition must be present to improve patient care, provide safe, competent and effective needs and interventions to the patient. The ability for the nursing student and nurse to accurately assess, intervene, evaluate and communicate in a timely manner is imperative to the success of the healthcare team, patient and institution. Regardless of limitations to the project there is a direct correlation between not recognizing a patient condition change and ineffectual, inconsistent or absent communication to the healthcare team.

Identifying areas of weakness throughout a nursing cohort assists nursing education to continually evaluate the effectiveness of the program's curriculum. Improving nursing curriculum improves nursing graduates which, hopefully, will improve bedside competence, intervention ability and timely patient condition change recognition.

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